BOEING COMMERCIAL AIRPLANE COMPANY
A DIVISION OF THE BOEING COMPANY
SEATTLE, WASHINGTON

DOCUMENT NO. D-180-14310-2D

TITLE: SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN

RENTON PLANT COMPLEX

MODEL _____

ISSUE NO. 18 TO: File June 15, 1974 (DATE)

PREPARED BY C. F. Garrison 6/30/74

SUPERVISED BY N. L. Omodt

APPROVED BY L. D. Garrison

APPROVED BY J. D. Bixby

(DATE)

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THE BOEING COMPANY

ACTIVE SHEET RECORD

SHEET NO.	REV LTR	ADDED SHEETS				SHEET NO.	REV LTR	ADDED SHEETS			
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INTRODUCTION

This document is divided into three distinct areas, in accordance with Environmental Protection Agency guidelines. These areas are:

1. CONTROL

   This part identifies the existing and planned spill prevention aspects of each hazard. The emphasis is upon prevention.

2. COUNTERMEASURES

   This part identifies the method on containing and/or removing a spill, after it has occurred.

3. COUNTERMEASURES WORK SHEETS

   These sheets identify the specific action to be taken in the event of a spill. One copy is posted in the general area of each hazard, and one copy is included in this document.

CERTIFICATION

I, Clifton Franklin Garrison, a Registered Professional Engineer, Mechanical, in the State of Washington do hereby certify that the Spill Prevention Control and Countermeasures Plan has been prepared in accordance with the Provisions of Part 112, Subchapter D, Chapter I of Title 40 CFR and is in accordance with good engineering practices.

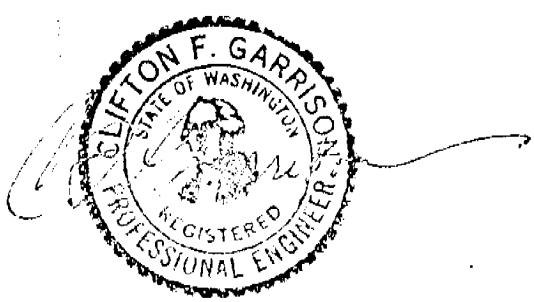
Signed: _____

Registration No.: 8357

Boeing Commercial Airplane Company

Org. R-6180, Mail Stop 62-15

Box 3707, Seattle, WA. 98124



EXHIBITS:

1. Corporate Policy 11N1

2. Boeing Commercial Airplane Company Operating Procedure #6-1000-051, "Pollution Control".

3. Letter R-6180-2010, dated 5/17/72, J.D. Bixby to Distribution "A", "Control of Spills of Pollutants or Hazardous Liquids".

The Vice President-Manufacturing will promote the development of manufacturing methods and procedures to control pollution in keeping with this policy statement.

The Vice President-Materiel will guide and monitor divisional compliance with customer contractual obligations which require subcontractor action for pollution control.

The Vice President-Government Contracts will guide and monitor contractual relationships with government customers concerning pollution control requirements.

The corporate Director of Facilities will promote design and development of economic pollution control facilities. He will provide for liaison with industry associations and with state and local regulatory agencies concerning pollution control matters affecting more than one group/division. He will also monitor policy compliance and provide necessary interpretations.

Each group/division manager is responsible for implementing pollution control measures in his operations consistent with the intent of this policy. He is responsible for providing, operating and maintaining pollution control equipment and systems consistent with established standards and criteria, and for assuring liaison with state and local regulatory agencies, directly or through the corporate Director of Facilities, as appropriate.

William M. Allen

IV. RESPONSIBILITIES

A. Group Functional Executives

Affected Group Functional Executives will develop and maintain procedures, directives, and functional standards in support of this procedure for their respective functional areas in coordination with the CAG Environmental Pollution Control Committee.

Provide for support of the CAG-Environmental Pollution Control Committee.

Contract Administration

Formulate, coordinate, and integrate approved environmental pollution control procedures related to contracts with Group customers.

Coordinate, interpret, and negotiate Group customer contractual provisions relating to environmental pollution control.

Establish and maintain appropriate communications and records to ensure the dissemination, preservation, and continuity of knowledge related to environmental pollution control in Group customer contractual matters.

Coordinate and advise other division organizations, when requested, on legal and contract matters.

Engineering

Learn of pending or possible pollution regulations that may or will affect the design, testing or in-service use of the Group's products as far in advance as possible, such that maximum time will be available to:

1. Help assure that any regulations which are established are reasonable, realistic and possible of compliance by The Boeing Company.

2. Develop suitable materials, processes and test methods.

Develop materials and processes consistent with product quality and economical operations to the extent that such are needed to achieve compliance with pollution control regulations.

In the development of process and material specifications always consider the environmental pollution control aspects.

IV. RESPONSIBILITIES (continued)

Coordinate and advise other Group organizations, when requested, on procurement legal and contract matters.

Manufacturing

Formulate, coordinate, and integrate approved environmental pollution control procedures related to the manufacturing of Group products.

Conduct approved programs for the development of manufacturing methods and procedures appropriate to Group environmental pollution control objectives.

Establish and maintain appropriate communications and records to ensure the collection, dissemination, preservations, and continuity of knowledge related to environmental pollution control in the manufacturing of Group products.

Quality Control

Monitor the formulation, coordination and integration of approved environmental pollution control procedures to ensure preservation of the product quality.

Perform analysis to isolate, identify and monitor waste liquid pollutants to insure compliance to applicable requirements.

B. Divisions/Branches - Managers

Division/Branch Managers will plan for and implement the provisions of this procedure and related directives, functional standards and procedures within their branch, and are responsible for the following:

1. Establish a focal point for environmental pollution control administration.

2. Establish such committees and/or organizational alignment as necessary to implement this procedure and provide support to the CAG-Environmental Pollution Control Committee.

3. Assure proper liaison with regulatory agencies directly or through the Director of Facilities - Program Services Branch as appropriate.

C. CAG-Environmental Pollution Control Committee

Develop Group objectives; develop Group procedures to satisfy Corporate and Group objectives.

Review and evaluate programs to carry out Group objectives; recommend procedures and specific programs considered necessary to meet Group objectives.

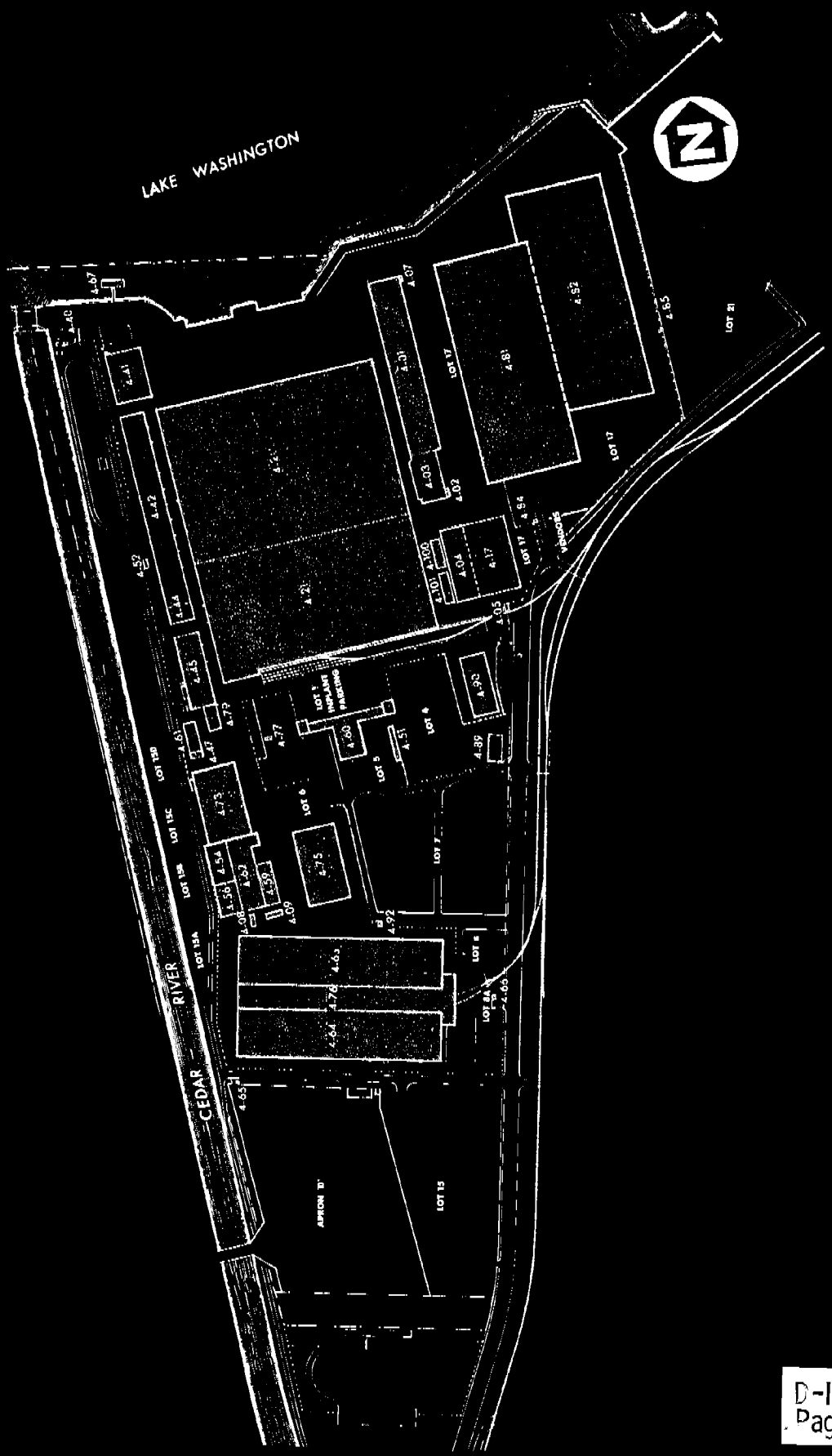
Attachment to
Memo R-6180-2010
May 17, 1972

CONTROL OF SPILLS

OF POLLUTANTS OR HAZARDOUS LIQUIDS

707/727/737 DIVISION

Task	Responsible Organization
1. Immediately report a spill of any pollutant or hazardous material which may enter a sewer system, surface water, or which may endanger life or property to the Boeing Emergency Dispatcher, phone number: Renton Complex - 7-2222 Boeing Field - 5-2222 Spares Support Center, Kent - 3-2222	Using Organization
2. In order, inform the following organizations: Security-Fire Protection; Facilities - Plant Services Dispatcher; Facilities - Plant Engineering. Representatives from these organizations will proceed immediately to the location of the spill.	Boeing Emergency Dispatcher
3. Take whatever action possible to prevent material from entering sewer system until help arrives such as: seal drain - divert material with rags and Speedy-Dri, etc. Do not flush with water.	Using Organization
4. Determine if situation endangers life or property. If it does, take charge and direct the control and clean-up effort. Do not flush to sewer unless absolutely necessary.	Security-Fire Protection
5. Determine method of neutralization and treatment, if necessary, as requested by Security-Fire Protection or Facilities Plant Services.	Quality Control
6. During emergency, provide assistance as required to Security-Fire Protection. If life or property is not in jeopardy, take charge, contain and clean up the spill.	Facilities Plant Services



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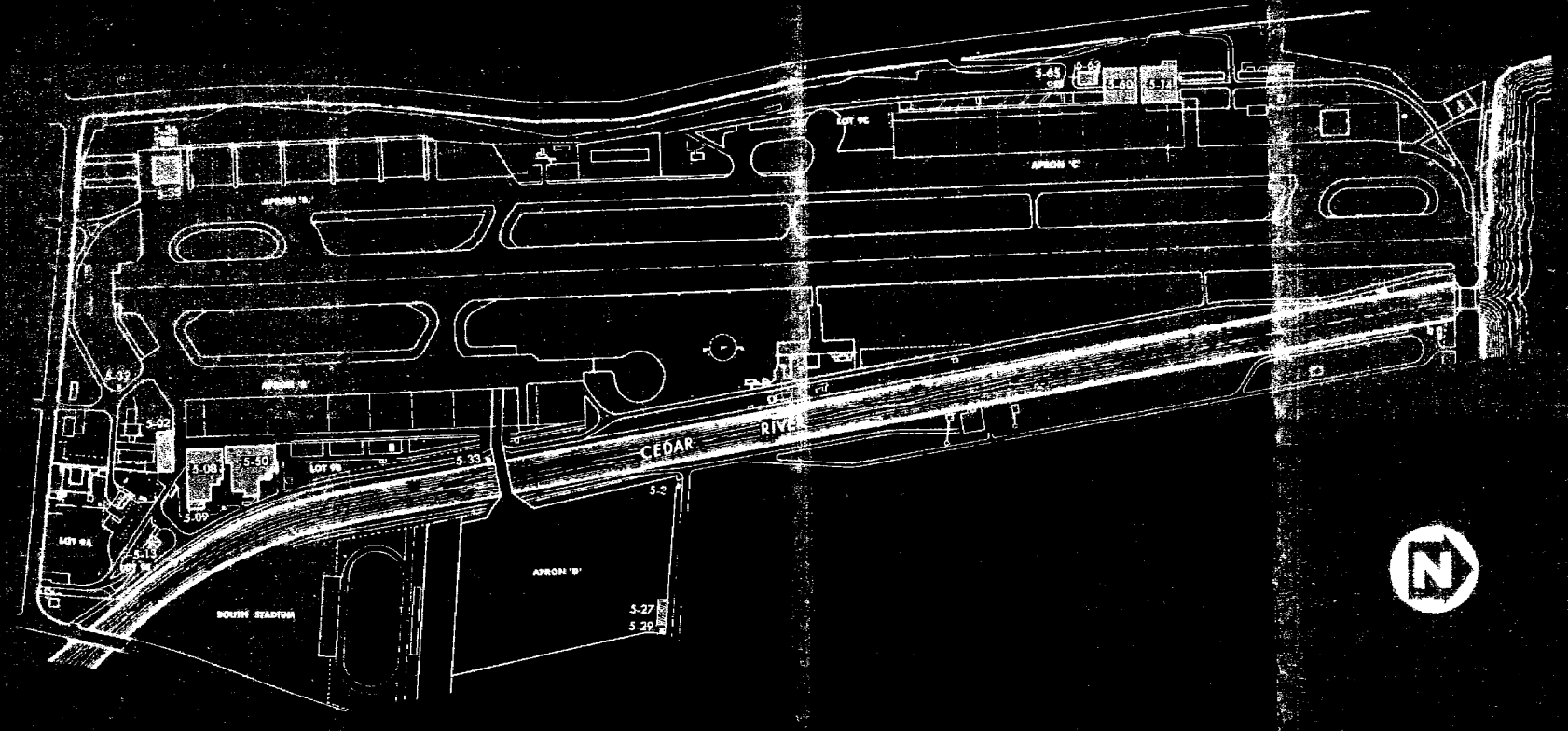

4.0.1 CONTROL PLAN (Continued)

MODIFICATION OF FACILITIES (Continued)

3. Diverting boiler blow-down from the storm to the sanitary sewers.

4. Plugging floor drains.

5. Installing curbs and no-drain sumps around certain critical storage areas.

PORTABLE DRUM SHELTERS

Portable drum shelters have been designed and built to store oil and other polluting or hazardous material. These shelters are constructed of steel, have three sides and a roof. The base is leak-proof and designed to contain about 200 gallons of liquid, should a drum rupture or leak. The shelters are equipped with a static grounding system. There are presently 18 of these shelters located at the Renton Complex.

TESTING PROGRAM

All chemicals, oils, and other liquids contained in no-drain sumps or diked areas, are tested by Quality Control Chemists to determine the chemical concentration. Results of these tests determine whether these liquids are sent to the sanitary sewer, or a commercial disposal firm.

STORAGE OF ABSORBENT MATERIALS

Speedy-dri, visqueen plastic, are available in all areas of the plant for use by Plant Personnel to contain a minor spill.

OIL RETENTION BOOM

An oil retention boom encloses the hydrofoil boats when these boats are moved at the dock in Lake Washington. These booms will confine any spills, should they occur, to the immediate area of the boat.

4.0.2 COUNTERMEASURES PLAN (Continued)

OUTSIDE SUPPORT (Continued)

The Operations Management of this firm has made a tour of the Renton Complex, met with Plant Services Management and developed contingency plans in the event their services are needed.

The Marine Oil Pick-Up Services Company is a secondary source of help in the event of a spill reaching the river or the lake.

4.1.1. CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PHYSICAL ASPECT (Continued)

The 250,000 gallon tank is equipped with an overfill alarm system, plus a sight gage, to prevent overflowing the tank. The vent is inside the dike, and any overflow through the vent would be contained within the dike.

A foam system with external connections, provides fire protection.

All valves are labelled to minimize human error in operation of the system. A complete set of drawings, flow diagrams, equipment parts lists, and tank capacity tables are provided for the steam plant personnel.

PLANNED SPILL PROTECTION

Install a sign giving detailed instructions to the oil tanker driver, on spill prevention safeguards.

4.1.2 COUNTERMEASURES PLAN

The major effort would be expended in inspection and testing of equipment to identify potential problems.

RESPONSE/ACTION

In the event of a spill, the operators are directed to take action to contain the spill and to shut off the flow of oil causing the spill. In the event additional help is required, they are directed to call 7-2222, the Emergency Dispatcher.

Details of the Response/Action requirements are identified on S.P.C.C. countermeasures work sheet.

TRAINING

Continual training in spill prevention/detection is planned. This training includes more detailed inspection of the total system, developing "work-around" methods to continue Plant Operations in the event of spills, and simulated spill situations, involving Plant Services and the Fire Department personnel.

4.2. TWO UNDERGROUND OIL STORAGE TANKS

LOCATIONS

These tanks are located in the ground, on the west side of the 4-89 Building.

DESCRIPTION

These tanks are cylindrical shape, of steel construction, with 15,000 gallon capacity each. They are equipped with suction and return lines, vents, and depth gages. All lines are below grade and enclosed in a concrete chase, with removal concrete covers. The tanks are filled through pressure fittings located in the top of each tank. These fittings are accessible by raising steel covers in a manhole.

Normally these tanks will be filled by gravity flow through existing lines, from the 250,000 gallon storage tank.

4.2.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These tanks are covered with a concrete slab, and all piping is contained within a concrete chase.

The depth gages are monitored during the filling or fuel transfer operations. The vent piping is protected from damage by their location in the trench and inside the building. The vent openings are through the building wall to the outside.

TRAINING

Steam Plant Operators are responsible for the filling of these two tanks. The operators have been provided with detailed drawings of all piping related to these tanks and are familiar, through training and experience, with the precautions necessary to prevent spills.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.2) Underground Oil Storage Tanks

LOCATION: West Side, 4-89 Building

DESCRIPTION: 15,000 Gallon, Steel, Cylindrical, Underground

HAZARD:

1. Ruptured Tank
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Spill while connecting or disconnecting fill hoses.
5. Tanker-truck tank rupture.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Seal catch-basin north of truck ramp.
3. Seal oil-line chase, west side of 4-89 Building.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.3. WASTE OIL STORAGE (Continued)

4.3.2. COUNTERMEASURES PLAN

GENERAL

Because of the distance of the tank from the river or lake, major emphasis will be placed on containing any spill by means of a dam in the ditch.

RESPONSE/ACTION

The primary effort will be to contain the spill in the immediate area of the tank and to place a retention dam in the ditch to prevent any spills from moving down the ditch.

TRAINING

Training will consist of familiarization of operating personnel with drainage patterns, location of sand, absorbent material and plastic sheeting for retaining the spill.

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4.4. SEVEN UNDERGROUND OIL STORAGE TANKS

LOCATION

South end of 4-44 Building.

DESCRIPTION

These tanks are 8' X 29', 12,000 gallon capacity, steel, cylindrical, and underground. They are covered by a concrete slab. They were installed as fuel oil storage for the 4-44 Building steam plant, which is now deactivated. These tanks are now used for standby fuel storage for the 4-89 Building steam plant.

4.4.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These tanks are used only for reserve storage of oil. No oil will be added or withdrawn from these tanks unless an emergency shortage of available oil exists.

The tanks, fitting, piping and pumps are underground or in a building, and are protected from damage by vehicular traffic. The tanks are equipped with depth gages.

Any fuel transfer into or out of these tanks is under the direct control of the 4-89 steam plant operators and their supervisors, and will be conducted under carefully controlled conditions.

TRAINING

Training consists of instructing Plant Services Personnel who use this facility, in the safeguards to be used when filling these tanks or transferring oil from them, with special effort to prevent over filling.

PLANNED SPILL PROTECTION

There is a 4" underground line from these tanks to the pump house at the north side of the 4-41 Building

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.4.) Seven Underground Oil Storage Tanks

LOCATION: South Side of 4-44 Building

DESCRIPTION: 8' X 29' cylindrical tanks, 12,000 gallon capacity, underground.

HAZARD:

1. Overfilling of tank or tanks and causing oil to come out of vents.
2. Rupture or failure of tank, causing oil to seep into the ground.
3. Failure of pipe on pressure side of oil transfer pipe.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close off source of spill.
2. Contain spill by use of sand, absorbent material and plastic.
3. Seal catch basin north side of 4-44 Building.
4. Dam ditch, west side of 4-44 Building.

DATE: 6/15/74 **REVISION/UPDATE NO.**

4.5. GASOLINE TANK AND PUMP (Continued)

4.5.2. COUNTERMEASURES PLAN

GENERAL

Major emphasis will be on containing any spill by means of dams of absorbent materials.

RESPONSE/ACTION

Contain the spill by placing absorbent material around the spill.

TRAINING

Training will consist of familiarization of personnel in drainage areas, location of sand, absorbent material and plastic sheeting for retaining the spill.

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4.6. KETONE TANK AND PUMP

LOCATION

Yard, southwest corner, 4-61 Building.

DESCRIPTION

This tank is steel, cylindrical, 10,000 gallons capacity, underground, and covered with a concrete slab. The tank is filled by tanker-truck through a 4" fill-pipe enclosed in a handhole.

Occasionally, when tank truck quantities are not available, shipments are received in 55 gallon drums. These drums are emptied into the 10,000 gallon tank.

The Ketone pump is a conventional service-station type electric pump with a hose and nozzle for filling containers.

All piping and electric conduit is underground.

4.6.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fill-pipe to the tank and the pump are a considerable distance from the nearest storm drain catch basin. The pump is well protected against damage from a vehicle. Oil absorbent material is available.

TRAINING

The operator dispensing gasoline has been instructed in the operation of the pump and safeguards to be used to prevent spills. Further training will be given, as required, to maintain this skill level.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.6.) Ketone Tank and Pump

LOCATION: Yard Southwest Corner of 4-61 Building.

DESCRIPTION: 10,000 Gallon Steel Tank, Cylindrical, Underground.

HAZARD:

1. Ruptured tank, drum or container.
2. Broken lines, hoses or fittings on tanks or pump.
3. Over-filling tanks by vendor tanker-truck.
4. Over-filling containers.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of sand, absorbent material and plastic.
3. Close storm drain in immediate area.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.7. UNDERGROUND OIL STORAGE TANK (Continued)

4.7.2 COUNTERMEASURES PLAN

GENERAL

Essentially, all countermeasures effort will be directed towards containing any spill that might occur.

RESPONSE/ACTION

The Plant Services personnel who will be monitoring the filling and transfer of oil from this tank are to make every effort to contain the spill, place a dam in the drainage ditch south of the fence and seal the catch basin in the vicinity of the tank.

TRAINING

Training will consist of familiarization of Plant Services personnel with drainage patterns, and location of sand, absorbent materials and plastic sheeting for retaining the spill.

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4.8. FUEL OIL SYSTEMS IN BOILER ROOMS

LOCATION

4-89 Building, 10-52 Building, 5-50 Building

DESCRIPTION

These systems consist of pipes, valves, regulators, strainers, pumps, heaters, flex hoses, pressure gages, thermometers and other items that supply heated oil to the burner nozzles, and return the excess oil to the storage tanks.

4.8.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fuel systems are designed and installed to meet applicable codes and standards. The equipment is rated to withstand the pressures and temperatures to which it may be subjected. Specific items are inspected at regular intervals, to minimize failures. Defective parts are replaced.

TRAINING

The steam plant operating personnel are experienced and licensed steam plant operators, and are familiar with the equipment. They have been instructed in the safeguards to be used to prevent spills and to contain them should they occur.

PLANNED SPILL PROTECTION

No additions are planned for these fuel systems.

4.8.2. COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain the spill and prevent it reaching any of the floor or trench drains.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.8.) Fuel Oil Systems In Boiler Rooms

LOCATION: 4-89, 10-52, 5-50 Buildings

DESCRIPTION: All piping, valves, regulators, strainers, pumps, heaters, etc., supplying heated oil to the burner nozzles and returning excess to the tanks.

HAZARD:

1. Broken fitting, pipe, hose, valve, etc.
2. Leakage of oil into condensate system at oil heaters.
3. Valve opened in error.

ACTION REQUIRED IN EVENT OF SPILL:

1. Contain spill by means of speedi-dri and visqueen.
2. Close-off source of oil. *
3. Seal floor drains.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

* If burning oil, evaluate effect of closing-off source of oil on steam plant operations. Switching to natural gas may be necessary.

4.9. DIESEL OIL TANK AND PUMP (Continued)

4.9.1. CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

No additional protection is felt necessary.

4.9.2 COUNTERMEASURES PLAN

GENERAL

Major emphasis will be on containing any spill by means of dams of absorbent materials.

RESPONSE/ACTION

Contain the spill by placing absorbent material around the spill.

TRAINING

Training will consist of familiarization of personnel in drainage areas, location of absorbent material and plastic sheeting for retaining the spill.

4.10 EMERGENCY GENERATORS AND THEIR FUEL SYSTEMS

LOCATION

4-21, 4-44, 4-81, 5-14, 5-50, 10-54 Buildings

DESCRIPTION

These emergency generators are fueled with diesel oil. The generators are automatically actuated in the event of failure of the primary power source. The fuel storage consists of an underground tank with a float actuated transfer pump maintaining a constant level in a small holding tank. The holding tank provides gravity flow of oil to the diesel oil fuel pump.

4.10.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The primary tank, fill-pipe and supply lines are underground. The fill-pipe and vents are protected from vehicle traffic. The holding tanks are located inside a building and are well protected. The generators, tanks and piping, because of their critical nature, are well maintained and receive regular preventive maintenance inspections.

TRAINING

Training consists in reviewing the spill hazard potential of each generator installation with the maintenance personnel inspecting, servicing and operating the equipment. Since these generator units are automatic operating, preventive maintenance/inspection will be highly important.

PLANNED SPILL PROTECTION

No additional protection is felt necessary at this time.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.10) Emergency Generators and Their Fuel Systems

LOCATION: 4-21, 4-44, 4-81, 5-14, 5-50, 10-54 Buildings

DESCRIPTION: Diesel Powered Generators With Diesel Oil Tanks

HAZARD:

1. Over-filling tanks.
2. Broken fittings, lines, gages, sight glasses.

ACTION REQUIRED IN EVENT OF SPILL:

1. Shut off source of spill.
2. Contain spill by means of absorbent materials and visqueen.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222 OR USE FIRE DEPARTMENT RADIO

4.11 FUEL TRANSFER OPERATIONS - RENTON FIELD (Continued)

4.11.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fuel tanks are located in a restricted area, which is curbed and slopes to drains that go to an oil separator. This separator has the capacity to handle the maximum storm water that could be expected. All above ground piping is protected against vehicle damage. Only trained operators are allowed in the area and to operate any of the equipment. The tanks farm is equipped with a water spray/fog system for fire protection.

Because of extreme fire hazard of fueling aircraft, precautions are taken to assure the safety and integrity of the fueling equipment and the capability of personnel responsible for the fueling operations. Precautions include requirements for standby fire department personnel during fueling/defueling operations, oil containment materials in the immediate vicinity and stringent fire-prevention measures. In addition, all major fueling/defueling activities are restricted to those apron positions having catch basins that go through oil separators.

The fuel tankers are rigidly inspected to assure proper operation and to comply with all the applicable codes and standards. Prevention of spills is of extreme importance and is subject to the insurance-carrier inspection and standards.

The fueling procedures are defined and published in a "Fuel Systems Manual". This manual spells out the precautions that must be taken to assure spill-proof fueling/defueling.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.11.) Aircraft Fuel Transfer Operations

LOCATION: Renton Field

DESCRIPTION: Filling underground tanks at tank farm, transferring fuel to tank-trucks and fueling/defueling aircraft.

HAZARD:

1. Broken hoses, fittings, connections, etc.
2. Over-filling tanks, tank-trucks or airplanes.
3. Ruptured tank on truck or airplane.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of absorbent material and plastic.

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CALL EMERGENCY NUMBER 7-2222 OR USE FIRE DEPARTMENT RADIO.

4.12 CENTRALIZED HYDRAULIC OIL SYSTEM (Continued)

4.12.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PHYSICAL (Continued)

authorized personnel and manned during the times that the facility is operating. Regular inspections of the facility and piping system are made and repairs are made on an expedited basis. All piping is under the floor and the risk of damage is negligible. The chases are equipped with dikes around the sump pumps so that any leaks or spills would be contained in the chases and not reach the sump pumps.

TRAINING

The personnel responsible for the system are experience personnel and are well trained in the operating and maintenance of high pressure hydraulic systems. Follow-on training will be provided in spill prevention and detection.

PLANNED SPILL PROTECTION

No additional spill protection is planned for this facility at this time.

4.12.2 COUNTERMEASURES PLAN

GENERAL

Major emphasis will be placed on containing any spill, either in the pan under the pumping facility or the chases under the floor.

RESPONSE/ACTION

Contain the spill with oil absorbent materials and plastic sheeting. Shutoff the source of spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.12) Hydraulic Oil System

LOCATION: 4-81, 4-82 Buildings

DESCRIPTION: Four hydraulic pumps manifolded into one system, plus the distribution system located in the chases underneath the floor of the building.

HAZARD:

1. Broken fitting, pipe, or hose on the high-pressure side of the system.
2. Dropped or ruptured drum during filling of the oil reservoirs.
3. Spilled oil when draining oil from aircraft, after completion of hydraulic pressure test.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill with oil absorbent material and plastic sheeting.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.13 FREON STORAGE TANK AND DISTRIBUTION SYSTEM (Continued)

4.13.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PHYSICAL ASPECTS (Continued)

significant spill would go into a utility trench which is approximately 900' long. The trench is "dead ended" and any spill into the trench would be contained within the trench.

TRAINING

Training consists of instructing personnel in the use of the system, including filling the reservoirs on the riveters and small containers.

PLANNED SPILL PROTECTION

The following items are to be incorporated into this system:

1. Lower one 50' section of 1" pipe to the floor to minimize danger of damage to the pipe.
2. Install two signs on the tank to read "Keep this valve closed when not filling tanks".
3. Post instruction sheet on method of filling small containers.

4.13.2 COUNTERMEASURES PLAN

GENERAL

Since any significant spill would go into the utility trench, the major effort would be to contain the spill in the trench.

RESPONSE/ACTION

The primary effort will be to contain the spill and to shut off the source of the spill. Containment will include use of absorbent material and plastic sheeting.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.13) Freon Storage and Distribution System

LOCATION: 4-20 Building

DESCRIPTION: 3000 gallon storage tank with pump and distribution system to the four general drivematic riveters, plus a filling facility for small containers.

HAZARD:

1. Broken hose, fitting, pipe or connection.
2. Broken sight-glass on tanks.
3. Overfilling tank or container.
4. Ruptured tank on riveter.

ACTION REQUIRED IN EVENT OF SPILL:

1. Shutoff source of spill.
2. Contain spill with absorbent material and plastic sheeting.
3. If spill goes into utility trench, seal trench at west end of building with absorbent material.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.14 PORTABLE DRUM SHELTERS (18) (Continued)

4.14.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

A supply of oil absorbent material and plastic sheeting will be made available in the close vicinity of each shelter.

4.14.2 COUNTERMEASURES PLAN

GENERAL

The major emphasis will be placed on care in handling the drums, housekeeping and inspection of the tank in the bottom of the shelters.

RESPONSE/ACTION

The primary effort will be to eliminate the source of the spill and to contain the spill, preferably within the shelter.

TRAINING

Training will consist of instructing operating personnel in the methods of containing a spill, location of the materials for containment, and the location of nearby drains.

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4.15 MOBILE EQUIPMENT

LOCATION

Throughout Renton Plant Complex.

DESCRIPTION

This equipment includes all trucks, pickups, fork lift trucks, scooters, cranes, graders and other types of motorized vehicles, including company and private automobiles used in the Renton Plant Complex.

4.15.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

Company owned vehicles are given periodic maintenance inspections to identify and correct mechanical problems. All lubrication and oil changes are performed in central maintenance areas.

TRAINING

Operators of mobile equipment such as trucks, lift trucks, etc. have been given instruction in the general care and operation of their vehicles. All problems identified are to be reported for maintenance repair.

PLANNED SPILL PROTECTION

No additions or modifications, specifically for spill protection, are planned for company owned mobile equipment at this time.

D1 4100 7740 ORIG.3/71

4.16 MACHINE TOOLS

LOCATION

Throughout Renton Plant Complex.

DESCRIPTION

This equipment includes lathes, drills, mills, shapers and other types of machine tools which have oil-filled transmissions, or use cutting fluid in their operation.

4.16.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

All major machine tools are given periodic maintenance inspections to identify and correct mechanical problems. Plant Services oilers lubricate the machines on a regular basis and are to report any problems.

TRAINING

The operators have been given instructions in the general care and operation of their machines. All problems identified are to be reported for maintenance repair.

PLANNED SPILL PROTECTION

No additions or modifications, specifically for spill protection, are planned for machine tools at this time.

J15-047

4.17 OVERHEAD CRANES

LOCATION

Throughout Renton Plant Complex.

DESCRIPTION

These overhead cranes include oil-filled transmissions as part of the drive systems.

4.17.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

All overhead cranes are given periodic maintenance inspections to identify and correct mechanical problems. Plant Services oilers lubricate these cranes on a regular basis and are to report any problems they see.

TRAINING

The crane operators have been given instructions in the general care and operation of the cranes. All problems identified are to be reported for maintenance repair.

PLANNED SPILL PROTECTION

No additions on modifications, specifically for spill protection, are planned for this time.

D1 4100 7740 ORIG.3/71

ABSTRACT

Current Environmental Protection Agency regulations require the preparation of an oil Spill Prevention Control and Countermeasures Plan. This S.P.C.C. plan is required of those owner/operators of facilities where oil is stored, processed, transferred, distributed or consumed. The plan is designed to prevent the discharge of oil into navigable waters and to contain such discharges, should they occur.

This Document contains the Spill Prevention Control and Countermeasures Plan for Boeing Commercial Airplane Company operations on Boeing Field.

The geographic extent of these operations is identified in the SCOPE section of this Document, Page vi.

J18-047

REVISIONS

REV SYM	DESCRIPTION	DATE	APPROVAL

D1 4100 7720 ORIG 3/71

J15-047

SCOPE

The Spill Prevention Control and Countermeasures Plan for the Commercial Airplane Company operations on Boeing Field covers the northwestern portion of Boeing Field. The 14-01 building, located west of East Marginal Way and south of Plant II, is also included. Excluded are Boeing/owned facilities on the east side of Boeing Field, and on the west side of Boeing Field, south of the 14-01 building. Buildings 3-360 and 3-361 are excluded.

See Site Plan, Page xii for details of areas covered.

The plan includes products classed as oil or oil derivatives. These products include but are not limited to heating oils, gasoline, diesel, jetfuel, lubricating oils, hydraulic oils, cutting fluids, transmission oils and waste oils. Oil derivatives include paint, methyl-ethyl-ketone, solvent and trichloroethylene.

D14100 7240 ORIG.8/71

DISTRIBUTION RECORD:

DATE (1974)	ISSUE NO.	TO	ORGN. NO.	MAIL STOP
June 12	1	J. D. Bixby	R-6001	62-15
June 12	2	L. D. Garrison	R-6180	62-15
June 12	3	D. L. Nurse	R-6200	93-03
June 12	4	J. K. MacDonald	R-6470	26-15
June 12	5	G. W. Kelly	R-6200	93-03
June 12	6.	N. L. Omodt	R-6180	62-15
June 12	7	Bert Cunnington	R-6402	26-43
June 12	8	R. A. Atkins	4-1720	16-77
June 12	9	R. D. Kier	4-1720	99-05
June 12	10	L. J. Buchsberger	R-6470	26-15
June 12	11	C. F. Garrison	R-6180	62-15
June 12	12	C. M. Riddell	R-6200	93-03
June 12	13-15	H. C. Donelson (3)	2-4101	87-71
June 12	16-18	File (3)		

J15-047

REFERENCES:

1. Corporate Policy 11N1.

2. Boeing Commercial Airplane Company Operating Procedure #6-1000-051, "Pollution Control".

3. Pollution Control Manual, D-180-14310-1.

4. Letter R-6180-2010, dated 5/17/72, J.D. Bixby to Distribution "A", "Control of Spills of Pollutants or Hazardous Liquids".

D1 4100 7740 ORIG.3/71

CORPORATE POLICY

DATE: August 21, 1967

NUMBER: 11N1

SUBJECT: ENVIRONMENTAL POLLUTION CONTROL

COMPLIANCE REQUIRED BY: ALL COMPANY ORGANIZATIONS

It is the policy of the Company to plan and operate its production, research and supporting activities to meet acceptable standards of environmental pollution control. For purposes of this statement, environmental pollution is defined as the alteration of air, water or land by chemical, physical or biological agents which adversely affect human health or comfort, animal or plant life, or structures and equipment. In effecting this policy, the Company will comply with pollution control criteria or standards promulgated by duly constituted pollution abatement agencies, and will work cooperatively with these agencies to assure development of economical, realistic and effective pollution control.

Effective environmental pollution control necessarily involves coordinated efforts both interorganizationally and interfunctionally. A corporate Pollution Control Committee will provide for the over-all coordination required. The Committee will oversee the selection of representatives to industry associations, monitor liaison with governmental agencies, and aid the appropriate dissemination of information, in regard to pollution control matters. The Committee will include the corporate Director of Facilities, who will serve as chairman, and representatives of the offices of the Vice President-Engineering, the Vice President-Government Contracts, the Vice President-Industrial and Public Relations, the Vice President-Manufacturing, and the Vice President-Materiel. The Committee's coordination efforts generally will flow through the functional channels of the Committee members.

RESPONSIBILITIES

The Vice President-Industrial and Public Relations is responsible for coordinating liaison with governmental bodies concerning environmental pollution control matters of a policy nature. He will provide for appropriate liaison with professional health associations and will ensure that the Company's pollution control criteria and practices are consistent with employee and public health and safety requirements.

The Vice President-Engineering will promote the development of process standards and specifications consistent with this policy statement, product quality and economical operations.

THE BOEING COMPANY
Manual

OPERATING PROCEDURE-DIRECTIVE
Commercial Airplane Group

No. 6-1000-051

November 12, 1969

SUBJECT: ENVIRONMENTAL POLLUTION CONTROL

TO: ALL COMMERCIAL AIRPLANE GROUP ORGANIZATIONS

FROM: E H Boulli
E. H. BOULLIOUN
GROUP VICE PRESIDENT

REFERENCE: Corporate Policy 11N1 - Environmental Pollution Control

I. PURPOSE AND SCOPE

The Commercial Airplane Group will plan and operate its production, research and supporting activities to comply with established standards of environmental pollution control. The Group will develop and use plans, procedures and engineered systems which will insure consistent control measures and will maintain favorable community relations.

II. GENERAL

The Commercial Airplane Group will cooperate with pollution control agencies, and actively participate in industrial associations and community organizations to assure development of timely, economical, realistic and effective pollution control regulations for the benefit of the Company and the community.

A group committee will provide for the coordination and guidance necessary for compliance with this procedure. The committee will include, but will not be limited to, representatives from the following functional organizations:

- Contract Administration
- Engineering
- Facilities
- Industrial Relations
- Manufacturing
- Materiel
- Quality Control

The Facilities representative will serve as committee chairman.

III. DEFINITION

Environmental pollution is defined as the alteration of air, water, or land by chemical, physical or biological agents which adversely affect human health or comfort, animal or plant life, or structures and equipment.

IV. A. (Continued)

Devise and conduct testing operations in a manner consistent with the requirements of pollution control regulations.

Incorporate into the design of the Group's products, such materials or features as may be needed to enable compliance with environmental pollution control regulations.

Facilities

Provide for the planning, installation, operations and maintenance of pollution control facilities to meet acceptable standards as established by regulations and Company policy.

Coordinate the monitoring of pollution control facilities, systems and procedures to assure continuous compliance with governmental regulations and Company policy.

Establish and maintain liaison activities with external organizations and governmental agencies and conduct such studies as may be necessary in order to improve the state-of-the-art in pollution control; promote adequate legislation; and maintain proper community relations.

Advise other functional organizations of existing or pending regulations which may have an impact on the Group's operation.

Industrial Relations

Act to protect employees and the public from contamination of the atmosphere or water resources in a manner injurious to health.

Maintain liaison with public health and safety agencies.

Establish procedures for air pollution control by:

1. Recommending air pollution control requirements and reviewing all installations.

2. Determining the efficiencies of air cleaning devices and recommending techniques for their improvement.

3. Monitoring operations and maintaining an inventory of sources of air pollutants.

Monitor for control of pollutants to assure compliance with applicable laws and regulations.

Materiel

Formulate, coordinate, and integrate approved environmental pollution control procedures related to contracts with Group subcontractors and suppliers.

May 17, 1972
R-6180-2010

To: Distribution "A"
707/727/737 Division and
Tenant Organizations

Subject: Control of Spills of Pollutants or Hazardous Liquids

The attached instructions have been developed in compliance with pollution control regulations and the State of Washington Department of Ecology waste water discharge permit.

Dissemination of this information to all employees in this division and full compliance with the instructions are mandatory to avoid possible fines or other penalties.

J. D. Bixby

Attachment

Task	Responsible Organization
7. If pollutant materials enter the storm sewer system or surface waters, immediately report incident to the U. S. Coast Guard (Seattle AT 4-2361). If material cannot be removed by Boeing personnel, immediately contact a Pollution Clean-Up Contractor.	Facilities Plant Services Duty Supervisor
8. If pollutant material enters the sanitary sewer system, immediately notify the municipal sewer treatment plant. Boeing Field - Call West Point Plant AT 4-6330 Renton and Kent - Call Renton Plant BA 6-3680	Facilities Plant Services Duty Supervisor
9. Notify the Department of Ecology District Engineer as soon as possible giving cause of spill and measures being taken for clean-up.	Facilities Pollution Control Engineer
10. Complete a written report within (5) days of the spill and transmit the memo to the Facilities Engineering Manager. The report should contain an accurate description of the spill and recommendations for preventing a recurrence.	Using Organization Plant Serives Fire Protection
11. Evaluate data as to cause of spill and take action necessary to prevent a recurrence; i.e., change operating procedure, modify equipment or facilities.	Facilities Engineering

5.0.2 COUNTERMEASURES PLAN - GENERAL

REPORTING SYSTEM

A radio network within the Plant II Complex, including Boeing Field, is used by Plant Security, Fire Department and Plant Services Organizations. The emergency dispatcher of Plant Security is delegated as the plant focal-point in reporting all spills. All personnel are instructed to telephone the emergency number 5-2222 in the event they see a spill. The emergency dispatcher notifies the Fire Department and Plant Services dispatchers, who alert the appropriate people to respond to the spill, with the necessary equipment and supplies. The emergency dispatch office is manned 24 hours per day, seven days per week. Plant Services and Fire Department personnel are on duty at Boeing Field 24 hours per day, seven days per week.

SPECIAL EQUIPMENT

The Plant Services Organization is well equipped with pumps, hose, portable tanks, oil boom, absorbent materials and tank trucks to contain and recover oil spills, should they occur. A work boat and outboard motor is available for work in the Duwamish River, should a spill occur that reaches the river.

5.1 FUEL TRANSFER OPERATIONS - BOEING FIELD (Dontinued)

5.1.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fuel tanks are located in a restricted area which is curbed and slopes to drains that go to an oil separator. This separator has the capacity to handle the maximum storm water that could be expected. The area is enclosed with a 8' chain link fence. All above-ground piping is protected against vehicle damage. Only trained operators are allowed in the area and to operate any of the equipment. The tank farm is equipped with a water spray/fog system for fire protection.

Because of the extreme fire hazard of fueling aircraft, precautions are taken to assure the safety and integrity of the fueling equipment and the capability of personnel responsible for the fueling operations. Precautions include requirements for standby fire department personnel during fueling/defueling operations, oil containment materials in the immediate vicinity, and stringent fire-prevention measures.

The fuel tankers are rigidly inspected to assure proper operation and compliance with all applicable codes and standards. Prevention of spills is of extreme importance, and is subject to the insurance-carrier inspection and standards.

The fueling procedures are defined and published in a "Fuel Systems Manual". This manual spells out the precautions that must be taken to assure spill-proof fueling/defueling.

TRAINING

All personnel having any responsibilities in the fueling/defueling process are thoroughly trained in all aspects of the operations before they are given any responsibility. In addition, the fire department personnel have been instructed in the procedures and methods of containing a spill should it occur. Further training will be given as required, to maintain the required skill level.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.1) Aircraft Fuel Transfer Operations

LOCATION: Boeing Field

DESCRIPTION: Filling underground tanks at tank farm, transferring fuel to tank-trucks, and fueling/defueling aircraft.

HAZARD:

1. Broken hoses, fittings, connections, etc.
2. Over-filling tanks, tank-trucks or airplanes.
3. Ruptured tank on truck or airplane.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of absorbent material and plastic.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222 OR USE FIRE DEPARTMENT RADIO

5.2 UNDERGROUND OIL STORAGE TANKS FOR STEAM PLANT (Continued)

5.2.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The steam plant operators monitoring the filling operations and/or the tank-truck driver, are to use plastic sheeting and oil absorbent material to contain any spill. Major effort should be directed towards preventing oil from entering the catch basin located in the yard northwest of the fuel tank or entering the pipe chase at the fuel tank. The emergency plant dispatch system or the Plant Services dispatcher will be used to get additional help should it be required.

TRAINING

Training will consist of a review of spill control measures to be taken to prevent entry of oil into the storm drains or the pipe chase, and the methods to be used to get additional help, should it be required.

5.3 UNDERGROUND OIL STORAGE TANK FOR HOT WATER BOILER

LOCATION

West side of the 3-830 building.

DESCRIPTION

This tank is cylindrical shape, of steel construction, with 2,000 gallon capacity. The piping consists of fill, suction, return and vent lines. The tank is filled from vendor tank-trucks through fill pipe located flush with the concrete slab. The tank and piping, other than the vent, are underground.

5.3.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The tank is covered with a concrete slab, and all piping is protected from vehicular damage. The depth of oil is determined by the steam plant operator, prior to filling and the amount of oil that each tank can safely hold is determined. This information is provided to the tank-truck operator, who can meter the amount of fuel going to the tanks. This method prevents the possibility of over-filling the tank. The tank-truck driver "stands-by" during the filling operation, and is available to shutoff the fuel and provide assistance in the event of a spill.

TRAINING

The vendor tank truck operator is responsible for monitoring the filling of this tank. These operators are familiar, though training and experience, with the precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

A container of oil absorbent material, with plastic sheeting, will be placed near the oil tank, for use in an emergency.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.3) Underground Oil Storage Tank for Hot Water Boiler

LOCATION: West Side, 3-830 Building.

DESCRIPTION: 2,000 Gallon, Steel, Cylindrical, Underground.

HAZARD:

1. Ruptured tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.
6. Over-filling tank.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Seal catch basin, west of fuel tank.
3. Seal drain in pipe chase.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.4.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The tank-truck operator monitoring the filling operations is to use plastic sheeting and oil absorbent material to contain any spill. Major effort should be directed towards preventing oil from entering the catch basin located in the yard southeast of the fuel tank. The emergency plant dispatch system or the Plant Services dispatcher will be used to get additional help should it be required.

TRAINING

Training will consist of a review of spill control measures to be taken to prevent entry of oil into the storm drains and the methods to be used to get additional help, should it be required.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.4) Underground Oil Storage Tank for Steam Boiler

LOCATION: West Side, 3-808 Building.

DESCRIPTION: 3,000 Gallon, Steel, Cylindrical, Underground

HAZARD:

1. Ruptured tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill-hose.
6. Over-filling tank.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Seal catch basin, southeast of fuel tank.

DATE: 6/15/74

REVISION/UPDATE NO.

CALL EMERGENCY NUMBER 5-2222

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.5) Underground Fuel Storage Tanks and Pumping Facility (Green Hornet)

LOCATION: West of 3-306 Building.

DESCRIPTION: Three 10,000 Gallon Underground Tanks with Pumping Facilities.

HAZARD:

1. Over-filling tanks.
2. Broken fuel lines or fittings.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill truck or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal off catch basin as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

J15-047

5.6 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (F SLAB) (Continued)

5.6.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

Guard rails will be placed on three sides of this slab to prevent the possibility of vehicular damage to the piping. Signs identifying the tank number of each tank, will be placed on each fill-pipe fitting. A container of oil absorbent material with plastic sheeting, will be provided near this facility, for use in an emergency. Guard posts will be installed on two sides of the test stand to prevent the possibility of vehicular damage to the exposed piping.

5.6.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The laboratory personnel operating the facility, as well as the tank-truck driver during filling operations, will use the oil absorbent material and the plastic sheeting to contain any spill, and to seal off any catch basins in the general area. The emergency dispatch system or the Plant Services dispatcher will be used to get additional help, should it be required.

TRAINING

Operating personnel will be given instructions in the location of drains and methods to be used to contain a spill.

D1 4100 7740 ORIG.8/71

ABSTRACT

Current Environmental Protection Agency regulations require the preparation of an oil spill prevention control and countermeasures plan. This S.P.C.C. plan is required of those owner/operators of facilities where oil is stored, processed, transferred, distributed or consumed. The plan is designed to prevent the discharge of oil into navigable waters and to contain such discharges, should they occur.

This Document contains the Spill Prevention Control and Countermeasures Plan for the Renton Plant.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVAL

SCOPE

This S.P.C.C. plan for the Renton Plant covers the geographic areas of the Renton Plant Complex, including areas under lease by the Boeing Commercial Airplane Company on Renton Field. Boeing Commercial Airplane Company operations on Boeing Field are not included in this section of the Plan.

This S.P.C.C. plan includes products classed as oil or oil derivatives. These products include but are not limited to heating oils, gasoline, diesel, jet fuel, lubricating oils, hydraulic oils, cutting fluids, transmission oils in machines, transformer oils, and waste oils. Oil derivatives include paint, methyl-ethyl-ketone, solvents and trichloroethylene.

NOTE: The Kent-Benaroya complex is included within the Renton functional area of operations. However, the total quantity of oil or oil derivatives at this site is below the minimum quantities required for reporting.

J15-047

DISTRIBUTION RECORD:

DATE (1974)	ISSUE NO.	TO	ORGN. NO.	MAIL STOP
June 12	1	J. D. Bixby	R-6001	62-15
June 12	2	L. D. Garrison	R-6180	62-15
June 12	3	D. L. Nurse	R-6200	93-03
June 12	4	J. K. MacDonald	R-6470	26-15
June 12	5	G. W. Kelly	R-6200	93-03
June 12	6.	N. L. Omodt	R-6180	62-15
June 12	7	Bert Cunnington	R-6402	26-43
June 12	8	R. A. Atkins	4-1720	16-77
June 12	9	R. D. Kier	4-1720	99-05
June 12	10	L. J. Buchsberger	R-6470	26-15
June 12	11	C. F. Garrison	R-6180	62-15
June 12	12	C. M. Riddell	R-6200	93-03
June 12	13-15	H. C. Donelson (3)	2-4101	87-71
June 12	16-18	File (3)		

D1 4100 7740 ORIG.3/71

J16-047

REFERENCES:

1. Corporate Policy 11N1.

2. Boeing Commercial Airplane Company Operating Procedure #6-1000-051, "Pollution Control".

3. Pollution Control Manual, D180-14310-1.

4. Letter R-6180-2010, dated 5/17/72, J.D. Bixby to Distribution "A", "Control of Spills of Pollutants or Hazardous Liquids".

D1 4100 7740 ORIG.3/71

CORPORATE POLICY

DATE: August 21, 1967

NUMBER: 11N1

SUBJECT: ENVIRONMENTAL POLLUTION CONTROL

COMPLIANCE REQUIRED BY: ALL COMPANY ORGANIZATIONS

It is the policy of the Company to plan and operate its production, research and supporting activities to meet acceptable standards of environmental pollution control. For purposes of this statement, environmental pollution is defined as the alteration of air, water or land by chemical, physical or biological agents which adversely affect human health or comfort, animal or plant life, or structures and equipment. In effecting this policy, the Company will comply with pollution control criteria or standards promulgated by duly constituted pollution abatement agencies, and will work cooperatively with these agencies to assure development of economical, realistic and effective pollution control.

Effective environmental pollution control necessarily involves coordinated efforts both interorganizationally and interfunctionally. A corporate Pollution Control Committee will provide for the over-all coordination required. The Committee will oversee the selection of representatives to industry associations, monitor liaison with governmental agencies, and aid the appropriate dissemination of information, in regard to pollution control matters. The Committee will include the corporate Director of Facilities, who will serve as chairman, and representatives of the offices of the Vice President-Engineering, the Vice President-Government Contracts, the Vice President-Industrial and Public Relations, the Vice President-Manufacturing, and the Vice President-Materiel. The Committee's coordination efforts generally will flow through the functional channels of the Committee members.

RESPONSIBILITIES

The Vice President-Industrial and Public Relations is responsible for coordinating liaison with governmental bodies concerning environmental pollution control matters of a policy nature. He will provide for appropriate liaison with professional health associations and will ensure that the Company's pollution control criteria and practices are consistent with employee and public health and safety requirements.

The Vice President-Engineering will promote the development of process standards and specifications consistent with this policy statement, product quality and economical operations.

THE BOEING COMPANY
Manual

OPERATING PROCEDURE-DIRECTIVE
Commercial Airplane Group

No. 6-1000-051

November 12, 1969

SUBJECT: ENVIRONMENTAL POLLUTION CONTROL

TO: ALL COMMERCIAL AIRPLANE GROUP ORGANIZATIONS

FROM: E H Boulloun
E. H. BOULLIOUN
GROUP VICE PRESIDENT

REFERENCE: Corporate Policy 11N1 - Environmental Pollution Control

I. PURPOSE AND SCOPE

The Commercial Airplane Group will plan and operate its production, research and supporting activities to comply with established standards of environmental pollution control. The Group will develop and use plans, procedures and engineered systems which will insure consistent control measures and will maintain favorable community relations.

II. GENERAL

The Commercial Airplane Group will cooperate with pollution control agencies, and actively participate in industrial associations and community organizations to assure development of timely, economical, realistic and effective pollution control regulations for the benefit of the Company and the community.

A group committee will provide for the coordination and guidance necessary for compliance with this procedure. The committee will include, but will not be limited to, representatives from the following functional organizations:

- Contract Administration
- Engineering
- Facilities
- Industrial Relations
- Manufacturing
- Materiel
- Quality Control

The Facilities representative will serve as committee chairman.

III. DEFINITION

Environmental pollution is defined as the alteration of air, water, or land by chemical, physical or biological agents which adversely affect human health or comfort, animal or plant life, or structures and equipment.

IV. A. (Continued)

Devise and conduct testing operations in a manner consistent with the requirements of pollution control regulations.

Incorporate into the design of the Group's products, such materials or features as may be needed to enable compliance with environmental pollution control regulations.

Facilities

Provide for the planning, installation, operations and maintenance of pollution control facilities to meet acceptable standards as established by regulations and Company policy.

Coordinate the monitoring of pollution control facilities, systems and procedures to assure continuous compliance with governmental regulations and Company policy.

Establish and maintain liaison activities with external organizations and governmental agencies and conduct such studies as may be necessary in order to improve the state-of-the-art in pollution control; promote adequate legislation; and maintain proper community relations.

Advise other functional organizations of existing or pending regulations which may have an impact on the Group's operation.

Industrial Relations

Act to protect employees and the public from contamination of the atmosphere or water resources in a manner injurious to health.

Maintain liaison with public health and safety agencies.

Establish procedures for air pollution control by:

1. Recommending air pollution control requirements and reviewing all installations.

2. Determining the efficiencies of air cleaning devices and recommending techniques for their improvement.

3. Monitoring operations and maintaining an inventory of sources of air pollutants.

Monitor for control of pollutants to assure compliance with applicable laws and regulations.

Materiel

Formulate, coordinate, and integrate approved environmental pollution control procedures related to contracts with Group subcontractors and suppliers.

May 17, 1972
R-6180-2010

To: Distribution "A"
707/727/737 Division and
Tenant Organizations

Subject: Control of Spills of Pollutants or Hazardous Liquids

The attached instructions have been developed in compliance with pollution control regulations and the State of Washington Department of Ecology waste water discharge permit.

Dissemination of this information to all employees in this division and full compliance with the instructions are mandatory to avoid possible fines or other penalties.

J. D. Bixby

Attachment

Task	Responsible Organization
7. If pollutant materials enter the storm sewer system or surface waters, immediately report incident to the U. S. Coast Guard (Seattle AT 4-2361). If material cannot be removed by Boeing personnel, immediately contact a Pollution Clean-Up Contractor.	Facilities Plant Services Duty Supervisor
8. If pollutant material enters the sanitary sewer system, immediately notify the municipal sewer treatment plant. Boeing Field - Call West Point Plant AT 4-6330 Renton and Kent - Call Renton Plant BA 6-3680	Facilities Plant Services Duty Supervisor
9. Notify the Department of Ecology District Engineer as soon as possible giving cause of spill and measures being taken for clean-up.	Facilities Pollution Control Engineer
10. Complete a written report within (5) days of the spill and transmit the memo to the Facilities Engineering Manager. The report should contain an accurate description of the spill and recommendations for preventing a recurrence.	Using Organization Plant Serives Fire Protection
11. Evaluate data as to cause of spill and take action necessary to prevent a recurrence; i.e., change operating procedure, modify equipment or facilities.	Facilities Engineering

D-180-14310-2D
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SEA427588

4.0.1 CONTROL PLAN (GENERAL)

PLANT LOCATION

The Renton Plant is located on the shore of Lake Washington, and the Cedar River. All storm drains go either to the river or to the lake. There are four major storm drains shared jointly by Boeing and the City of Renton, and one by Boeing and Puget Sound Power and Light Co. There are seven Boeing storm drains going directly to the lake, and six going directly to the river.

The Renton Plant leases property on Renton Municipal Airport, which is located on the west side of the Cedar River. The Black River drainage system is located on the west side of the Renton Airport. There are approximately fifteen storm drains from the Renton Airport to the Cedar River, thirty storm drains to the Black River drainage, and three to Lake Washington.

SECURITY OF PLANT

All Boeing owned facilities are enclosed by an 8' chain-link fence. Access to the plant areas is rigidly controlled by an armed security force. Admittance is restricted to Boeing employees, those having special admittance badges, such as contractor personnel, and visitors when escorted by Boeing personnel.

Security officers and Fire Department inspectors make inspection of all plant areas on a regular basis. They have been instructed to check for pollution hazards and to report any potential problems.

MODIFICATION OF FACILITIES

Considerable effort has been spent in modifying existing facilities to prevent spills from reaching the river or the lake. Following are typical examples:

1. Enclosing all solid waste compactors with drainage trenches and oil separators.

2. Diverting cooling tower water discharge from the storm to the sanitary sewer.

4.0.2 COUNTERMEASURES PLAN (GENERAL)

REPORTING SYSTEM

A radio network within the Boeing Plant is used by the Plant Security, Fire Department and Plant Services Organizations. The Emergency Dispatcher, phone 7-2222 is delegated as the Plant focal-point in reporting all spills. All employees are instructed to telephone the Plant Emergency Number 7-2222 in the event they see a spill. The Emergency Dispatcher notifies the Fire Department and Plant Services dispatchers, who alert the appropriate people to respond to the spill, with the necessary equipment and supplies. These emergency dispatch stations are manned 24 hours per day, seven days per week.

Two outfalls from the Renton Plant discharge into a small creek which is within the City of Renton, Lake Washington Park. Provisions have been made for access to the park during those hours when the park is closed.

OIL BOOMS

Oil-containment booms are available to Plant Services personnel to contain a spill in the Cedar River or Lake Washington. Special logs, with work floats, attachment links, and access ladders have been installed in the Cedar River for attaching oil booms in the event of a spill in the river.

SPECIAL EQUIPMENT

The Plant Services Organization is well equipped with pumps, hose, portable tanks, oil booms, absorbent materials, work boats with motors, and tank trucks to contain and recover oil spills, should they occur.

OUTSIDE SUPPORT

The Marine Oil Pick-Up Services Company (MOPS) specializes in containment and removal of oil spills. This firm is equipped with booms, tugs, oil skimmers and other specialized equipment required to handle large spills into water.

J15-047

4.1. ITEM

250,000 Gallon Oil Storage Tank

LOCATION

Yard area west of 4-89 Building.

DESCRIPTION

This tank is an above-ground tank, of steel construction, approximately 40 feet in diameter and 29 feet high. It is equipped with a steam heated internal suction heater, for heating the oil going to the steam plant. The piping system includes a 4" suction line, a 4" oil return line and a 3" fill line. All oil lines are equipped with steam tracers and insulated. All oil, and steam lines connected to the tank are equipped with flexible hose, to accommodate any settling of the tank. The condensate from the heater and steam tracers goes to the sanitary sewer.

4.1.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This tank is enclosed by a concrete dike with a nominal height of 6 feet. The area inside the dike has a vinyl liner covered with 3" of sand. Penetrations through this liner are sealed with waterproof adhesive. The dike is designed to contain the maximum capacity of the tank, should a pipe break or the tank rupture.

The surface water inside the dike flows into a concrete sump. This sump is equipped with an electric sump pump, controlled by an electric disconnect switch located inside the steam plant. The switch to the sump pump is kept in the "off" position. The steam plant operators inspect the sump before pumping the sump. Discharge from this pump can be directed to the sanitary sewer or to a tanker for disposal at a commercial disposal firm.

The fueling slab for tanker trucks is curbed and slopes to a drain. This drain goes into the sump described above, so that any spills of oil on the slab go into the sump.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.1) 250,000 Gallon Fuel Oil Storage Tank

LOCATION: West of 4-89 Building

DESCRIPTION: 40'diameter X 29' high circular steel tank enclosed by 6' high concrete dike.

HAZARD:

1. Ruptured tank.
2. Broken fuel line or fitting.
3. Oil leak into condensate system.
4. Tanker-truck hose failure.
5. Spill while connecting or disconnecting fill hoses.
6. Tanker-truck tank rupture.

ACTION REQUIRED IN EVENT OF SPILL:

SPILL INSIDE DIKE:

1. Make sure that sump pump is not operating.
2. Close off source of spill.*

SPILL OUTSIDE DIKE:

1. Contain spill by speedi-dri and visqueen.
2. Seal catch basin north of truck ramp.
3. Seal oil line chase west side of 4-89 Building.

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CALL EMERGENCY NUMBER 7-2222

* Evaluate effect of closing-off oil on steam plant operations. Depending upon seriousness of situation, switch to oil from day-tanks, or to natural gas.

4.2.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

No additions are planned for these tanks.

4.2.2 COUNTERMEASURES PLAN

GENERAL

Essentially all countermeasures effort would be directed to containing any spill that might occur.

RESPONSE/ACTION

The steam plant operators monitoring the filling operations are directed to use available plastic sheeting and oil absorbent material to contain any spill and to prevent any oil from getting into a storm drain. They will use the Emergency Dispatch System to get help, should it be required.

TRAINING

Training will consist of review of spill control measures to be taken, and simulation of actual spills.

J18-047

4.3. E OIL STORAGE

LOCATION

Yard, southeast corner 4-45 Building.

DESCRIPTION

This tank is constructed of 4" X 8" timbers bolted together, to form a 3' X 19' tank 5' high, and sealed to prevent leakage. There is a 3" fill pipe and a 3" suction pipe, in the top of the tank. The tank and piping is above ground.

The tank is used for interim storage of waste oils from various plant locations. When approximately 1500 gallons of oil are accumulated, the oil is pumped into a tanker for disposal at a commercial disposal firm.

.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

Containers are placed under fill and drain connections to capture any drippings that might occur when filling or emptying the tank.

The natural drainage of the area surrounding this tank goes to a small ditch. This drainage ditch, which is normally dry, discharges into a flume approximately 1600 feet from the oil storage tank. An oil absorbing/retention boom surrounds the discharge of the flume into the river.

TRAINING

Training consists of instructing Plant Services Personnel who use this facility, in the safeguards to be used when filling and emptying the tank.

PLANNED SPILL PROTECTION

A water-proof cover is planned for this tank to prevent rainwater from entering the tank.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.3.) Waste Oil Storage Tank

LOCATION: Southeast corner of 4-45 Building

DESCRIPTION: 3' X 5' X 19' Wood tank

HAZARD:

1. Ruptured tank.
2. Broken lines or fittings.
3. Tanker-truck hose failure.
4. Spill while connecting or disconnecting hoses.
5. Tanker-truck tank rupture.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close off source of spill.
2. Contain spill by use of sand, absorbent material and plastic.
3. Construct a dam across the ditch by using sand and plastic.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.4. SEVEN UNDERGROUND OIL STORAGE TANKS (Continued)

4.4.1. CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

This line is deactivated. The line will be drained of any oil, so that any rupture of this line, or failure of an expansion joint, would not leak oil into the pipe chase or a manhole.

4.4.2. COUNTERMEASURES PLAN

GENERAL

Because these tanks are for "dead" storage of oil, major emphasis will be placed on housekeeping inspections of the tanks and the area.

RESPONSE/ACTION

The primary effort will be to contain the spill and to seal the one catch basin south of the tanks.

TRAINING

Training will consist of instructing Plant Services Personnel in the methods of containing a spill with oil absorbent material and plastic sheeting, and the techniques of sealing catch basins.

4.5. GASOLINE TANK AND PUMP

LOCATION

Yard south of 4-79 Building.

DESCRIPTION

These two tanks are of steel construction, cylindrical, 1000 gallon capacity each, underground and covered with a concrete slab. They are filled with a 4" fill pipe enclosed in an 8" X 10" handhole.

The gasoline pump is a conventional service station type, electric pump with a hose and nozzle for filling vehicles. The pump is located on a concrete "island" and protected by 4" steel posts set in concrete.

All piping and electric conduit is underground.

4.5.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fill pipe to the tank and the gasoline pump are a considerable distance from the nearest storm drain catch basin. The pump, is well protected against damage from a vehicle. Oil absorbent material is available.

TRAINING

The operator dispensing gasoline has been instructed in the operation of the pump and safeguards to be used to prevent spills. Further training will be given, as required, to maintain this skill level.

PLANNED SPILL PROTECTION

No additional protection is felt necessary.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.5.) Gasoline Tank and Pump

LOCATION: Yard South of 4-79 Building

DESCRIPTION: Two Tanks, 1000 Gallon Each, Underground

HAZARD:

1. Ruptured tanks.
2. Broken lines, hoses or fittings on tanks or pumps.
3. Over-filling tanks by vendor tanker-trucks.
4. Over-filling vehicles.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of sand, absorbent material and plastic.
3. Close storm drain in street east of gas pumps.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.6. KETONE TANK AND PUMP (Continued)

4.6.1. CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

No additional protection is felt necessary.

4.6.2 COUNTERMEASURES PLAN

GENERAL

Major emphasis will be on containing any spill by means of dams of absorbent materials.

RESPONSE/ACTION

Contain the spill by placing absorbent material around the spill.

TRAINING

Training will consist of familiarization of personnel in drainage areas, location of sand, absorbent material and plastic sheeting for retaining the spill.

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4.7. UNDERGROUND OIL STORAGE TANK

LOCATION

South of 4-64 Building.

DESCRIPTION

This tank is cylindrical, steel 25,000 gallon capacity, underground, and covered with a concrete slab. All piping is underground. This tank was installed to provide fuel to the steam plant formerly located in the 4-64 Building.

The steam plant has been removed. The tank is now used for "dead" storage of oil that can be used by other oil burning equipment.

Filling and transfer of oil would be by tanker-truck or by pumping through a 4" underground line from the 250,000 gallon oil tank at the 4-89 Building.

4.7.1. CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This tank is underground and covered by a concrete slab. The fill-pipe is enclosed in a handhole.

TRAINING

Plant Services personnel are responsible for filling this tank or transferring oil from the tank.

PLANNED SPILL PROTECTION

No additions are planned for this tank.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.7.) Underground Storage Tank

LOCATION: Yard Area, South of 4-64 Building, at Old Boiler House.

DESCRIPTION: 25,000 Gallon Tank, Steel, Underground.

HAZARD:

1. Ruptured tank.
2. Broken lines or fittings.
3. Tanker-truck tank rupture.
4. Spill while connecting or disconnecting hoses.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of sand, absorbent material and plastic.
3. Construct a dam across the ditch by using sand and plastic.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.8. FUEL OIL SYSTEMS IN BOILER ROOMS (Continued)

4.8.2. COUNTERMEASURES PLAN (Continued)

TRAINING

Continual training in spill prevention/detection is planned. This will include review of the systems and location of the drains. Simulated spill situations will also be used.

4.9. DIESEL OIL TANK AND PUMP

LOCATION

Yard southeast corner of 10-52 Building.

DESCRIPTION

This tank is of steel construction, cylindrical, 1000 gallon capacity, underground and covered with a concrete slab. It is filled with a 2 fill-pipe, located against the building, and protected by steel posts set in concrete.

The diesel oil pump is a conventional service station type, electric pump with a hose and nozzle for filling vehicles. The pump is located on a concrete "island" and protected by 4" steel posts set in concrete.

All piping and electric conduit is underground.

The pump controls are locked, and the key kept in the Maintenance Dispatcher office. Only authorized personnel have access to the key.

4.9.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fill pipe to the tank and the gasoline pump are a considerable distance from the nearest storm catch basin. The pump is well protected against damage from a vehicle. Oil absorbent material is available.

TRAINING

The operators dispensing diesel oil have been instructed in the operation of the pump and safeguards to be used to prevent spills. Further training will be given as required to maintain the required skill level.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.9.) Diesel Oil Tank and Pump

LOCATION: Yard Southeast Corner of 10-52 Building

DESCRIPTION: One Tank, 1000 Gallon, Underground

HAZARD:

1. Ruptured tank.
2. Broken lines, hoses or fittings on tank or pump.
3. Over-filling tank by vendor tanker-truck.
4. Over-filling vehicles.
5. Failure of tanker-truck hose, fittings or tank.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of absorbent material and plastic.
3. Close storm drain in street, east of gas pumps.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 7-2222

4.10 EMERGENCY GENERATORS AND THEIR FUEL SYSTEMS (Continued)

4.10.2 COUNTERMEASURES PLAN

GENERAL

Major emphasis will be on containing any spill by means of dams of absorbent materials and plastic.

RESPONSE/ACTION

Contain the spill by placing absorbent material around the spill.

TRAINING

Training will consist of familiarization of personnel in location of drainage areas, location of sand, absorbent material and plastic sheeting for retaining the spill.

4.11 FUEL TRANSFER OPERATIONS - RENTON FIELD

LOCATION

Renton Field

DESCRIPTION

Fuel Tanks:

There are (2) tanks of 50,000 gallons each, and (1) tank of 12,000 gallons. These fuel storage tanks are steel, circular, underground and covered with a concrete slab. A holding tank of 12,000 gallon capacity of reinforced concrete construction is underground and covered with a concrete slab.

Fuel Tankers:

The fuel tankers are tractor-semi-trailer combinations, containing pumps, hoses, controls and meters. Two units are F-6's and one is a M.J.1.

These tankers contain 5,000 gallons of fuel, have a pumping capacity of 600 GPM with two hoses and 350 GPM on one hose. The tankers are equipped with float actuated high level shut off devices which automatically close off the fuel-flow into the tankers to prevent over-filling. In addition to this automatic fuel shutoff, a secondary high level alarm sounds if the automatic fuel shutoff fails. The hoses are equipped with dry-break nozzles to prevent loss of fuel when disconnecting the couplings. The nozzles are designed so that fuel-flow cannot start until the nozzles are firmly connected to the airplane. One of the units has electrical interlocks to the ignition of the truck to prevent moving the truck unless the nozzles are disconnected from the airplane or the fuel nozzles at the tank farm. An emergency over-ride is provided so that the truck can be started and moved away in the event of a fire. Each unit is equipped with a hook on the front bumper so that they can be towed away from an airplane in the event of an emergency.

4.11 FUEL TRANSFER OPERATIONS - RENTON FIELD (Continued)

4.11.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

TRAINING

All personnel having any responsibilities in the fueling/defueling process are thoroughly trained in all aspects of the operations before they are given any responsibility. In addition, the fire deparement personnel have been instructed in the procedures and methods of containing a spill should it occur. Further training will be given as required to maintain the required skill level.

PLANNED SPILL PROTECTION

No additional spill protection is planned at the present time.

4.11.2 COUNTERMEASURES PLAN

GENERAL

Major emphasis will be placed on containment of a spill should it occur, plus continuing the periodic inspection of the oil separators that are part of the fueling system.

RESPONSE/ACTION

Contain the spill by means of oil absorbent material that is available. Use the fire department radio to summons additional help should it be needed.

TRAINING

Training will consist of instructing the fueling personnel in the need for fuel prevention, review of location of the drains in the areas, and the techniques for containing spills.

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4.12. CENTRALIZED HYDRAULIC OIL SYSTEM

LOCATION

4-81, 4-82 Buildings and Underground Chases

DESCRIPTION

The hydraulic system consists of an installation of four motor-driven hydraulic pumps, manifolded into one distribution system. The motors are 150 HP, the pumps are rated 60 GPM with an operating pressure of 3750 PSI. Normally, only one pump is operating at any one time. A second pumping unit may be activated during periods of high demand. The system is pressurized 24 hours per day, six days per week. On rare occasions, there may be seven day per week operation.

The facility is manned by experienced operators during all times that the facility is operating. These operators are responsible for the operation and all maintenance and inspection of the system.

There are approximately 200 gallons of Skydrol hydraulic fluid in each of the four reservoirs of the system, plus 750 gallons in the distribution system.

The distribution system consists of piping systems located in concrete chases underneath the floor. Pressure take-off points are located throughout the building for "tapping" the system. These points consist of a tee, a valve, and a no-drip hydraulic coupling. These points are located underneath the floor. Hydraulic hoses, with mating no-drip couplings are attached to these take-off points whenever and wherever pressure is required.

4.12.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL

The major portion of the pumping system is installed over a leak-proof pan so that any spills would be contained. The system has a low-pressure cutoff so that any loss of pressure will automatically shut-down the system. The area is restricted to

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4.12 CENTRALIZED HYDRAULIC OIL SYSTEM (Continued)

4.12.2 COUNTERMEASURES PLAN (Continued)

TRAINING

Training will consist of instructing the operating personnel in methods of containing the spills, location of oil absorbent materials and sheeting, and the operating controls to the sump pumps located in the chases.

4.13 FREON STORAGE TANK AND DISTRIBUTION SYSTEM

LOCATION

4-20 Building

DESCRIPTION

This skid mounted steel tank has a capacity of 3000 gallons. It is built to ASME specifications, rated 15 PSI vacuum and 110 PSI pressure. The tank is equipped with a motor-driven gear pump, a filter, sight gage, pressure relief valve and pressure gages. The fluid is delivered under pump pressure to four reservoirs on the general drivematic riveters, and also to a hose assembly for filling small containers. The tank and pumping system is vendor provided, but maintained by the Boeing Company

The distribution system consists of a 1" high pressure bronze line to each riveter. These reservoirs are filled from the storage tank, then pressurized with air to 90 PSI to convey the cutting fluid to the drill heads of the riveters. Check valves in these lines prevent back pressurization of the 3000 gallon tank.

4.13.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The tank is isolated from vehicle traffic so an impact damage is highly unlikely. All valves from the tank are normally kept in the closed position so that a ruptured line would only drain the relatively small quantity of fluid in that section of the line. The pressure relief valve prevents an overpressure from the vaporization of the fluid in the tank. The tank and the lines to the riveters are located in an area where there is considerable personnel traffic so that any leak should be quickly noted. Filling of the tank is done by vendor personnel direct from a tank-truck.

Freon is a highly volatile fluid, with a boiling point under 100° F. Any minor spill would immediately vaporize and leave no liquid residue. A

4.13 FREON STORAGE TANK AND DISTRIBUTION SYSTEM (Continued)

4.13.2 COUNTERMEASURES PLAN (Continued)

TRAINING

Training will consist of instructing plant operating supervisor of the area in the methods of containing a spill and the location of containment materials.

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4.14 PORTABLE DRUM SHELTERS (18)

LOCATION

Throughout the Renton Plant Complex, including Renton Field. (Locations change, depending upon requirements at any given time.)

DESCRIPTION

These portable shelters are of steel construction, three sided, with a roof. The floor consists of a tank with a capacity of approximately 200 gallons. The shelters are equipped with a ground rod and an electrical grounding system, designed for fork lift handling. They are 12' wide, 8' deep and 7'6" high.

4.14.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These storage shelters are used for the storage of drums of oil, chemicals and other materials that have potential for pollution. The maximum size contained normally stored in these shelters is a 55 gallon drum which should represent the maximum amount that would spill at any one time. The shelters are installed so that the floor slopes to a drain at the rear of the shelter which goes into the bottom tank. An opening in the top of the tank provides visibility of the depth in the tank and a means of pumping the tank.

TRAINING

Personnel using the shelters are instructed in the proper use of the dollies moving the drums. Shop personnel have been instructed to place the drums in the shelters as quickly as possible after arrival to minimize risk of damage to the container while it is out of the shelter.

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COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY
RENTON COMPLEX

ITEM: (4.14) PORTABLE DRUM SHELTERS (18)

LOCATION: Throughout Renton Plant Complex (Location changes as requirements change.)

DESCRIPTION: Steel Storage Sheds with Steel Floor

HAZARD:

1. Leaking drums or containers.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of oil absorbent material and plastic.
3. Seal nearest catch basin if necessary.

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4.15 MOBILE EQUIPMENT (Continued)

4.15.2 COUNTERMEASURES PLAN

GENERAL

Major effort will be to prevent spills from reaching a storm or sanitary drain, or reach the lake or river through surface drainage.

RESPONSE/ACTION

Operators of a vehicle creating a spill are to park their vehicle away from any drain; contain the spill with materials available, and report the spill to to the emergency dispatcher.

COUNTERMEASURES WORK SHEET

Because of the number of vehicles involved, no individual Countermeasures Work Sheets will be prepared. Company employees will be instructed in spill prevention and control through company publications and other media.

4.16 MACHINE TOOLS (Continued)

4.16.2 COUNTERMEASURES PLAN

GENERAL

Major effort will be to contain any spills in the immediate area, and seal any floor drains or catch basins that may be necessary.

RESPONSE/ACTION

Operators noticing a spill are to shutoff their machines and close-off the source of the spill. The spill is to be contained by means of oil absorbent materials and plastic sheeting.

COUNTERMEASURES WORK SHEET

Because of the number of machines involved, no Countermeasures Work Sheets will be prepared. Company employees will be instructed in spill prevention and control through company publications and other media.

4.17 OVERHEAD CRANES (Continued)

4.17.2 COUNTERMEASURES PLAN

GENERAL

Major effort will be to contain any spills in the immediate area and seal any floor drains or catch basins that may be necessary. Since these cranes are over occupied areas, repositioning a crane to a more suitable location may be necessary to prevent oil damage to parts, equipment or personnel.

RESPONSE/ACTION

Crane operators and floor personnel assisting the crane operators, are to position cranes where oil would not damage parts or equipment. Oil is to be contained by oil absorbent materials and plastic sheeting. Fire hazards from oil dripping on hot surfaces are to be considered.

TRAINING

Personnel involved in operation and maintenance of the overhead handling equipment are to be instructed in the spill potential of those items, with oil-filled transmissions or hydraulic systems, including the location of critical floor drains and spill-control materials.

COUNTERMEASURES WORK SHEET

Because of the number of machines involved, no Countermeasures Work Sheets will be prepared. Company employees will be instructed in spill prevention and control through company publications and other media.

THE BOEING COMPANY

COMMERCIAL AIRPLANE DIVISION

RENTON, WASHINGTON

DOCUMENT NO. D-180-14310-2E

TITLE: SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN FOR BOEING FIELD

MODEL _____

ISSUE NO. 18 TO: File June 15, 1974 (DATE)

PREPARED BY	C. F. Garrison	6/1/74
SUPERVISED BY	J. K. MacDonald	
APPROVED BY	J. K. MacDonald	
APPROVED BY	J. D. Bixby	6/7/74
		(DATE)

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REV SYM

LIST OF ACTIVE PAGES

SECTION	PAGE NUMBER	REV SYM	ADDED PAGES						SECTION	PAGE NUMBER	REV SYM	ADDED PAGES					
			PAGE NUMBER	REV SYM	PAGE NUMBER	REV SYM	PAGE NUMBER	REV SYM				PAGE NUMBER	REV SYM	PAGE NUMBER	REV SYM	PAGE NUMBER	REV SYM

AD 1546B

REV SYM

TABLE OF CONTENTS

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INTRODUCTION

This Document is divided into three distinct areas, in accordance with Environmental Protection Agency quidelines. These areas are:

1. CONTROL

   This part identified the Existing and Planned Spill Prevention aspects of each hazard. The emphasis is upon prevention.

2. COUNTERMEASURES

   This part identified the method of containing and/or removing a spill, after it has occurred.

3. COUNTERMEASURES WORK SHEETS

   These sheets identify the specific action to be taken in the event of a spill. One copy is posted in the general area of each hazard, and one copy is included in this Document.

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CERTIFICATION

I, Clifton Franklin Garrison, a Registered Professional Engineer, Mechanical, in the State of Washington do hereby certify that the Spill Prevention Control and Countermeasures Plan has been prepared in accordance with the Provisions of Part 112, Subchapter D, Chapter I of Title 40 CFR and is in accordance with good engineering practices.

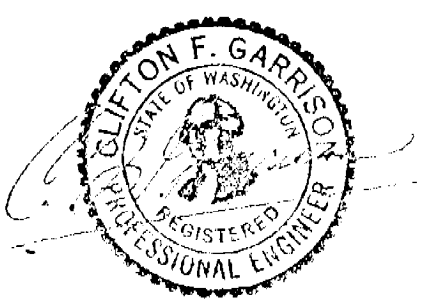
Signed: Clifton F. Garrison

Registration No.: 8357

Boeing Commercial Airplane Company

Org. R-6180, Mail Stop 62-15

Box 3707, Seattle, WA. 98124



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EXHIBITS:

1. Corporate Policy 11N1.

2. Boeing Commercial Airplane Company Operating Procedure #6-1000-051, "Pollution Control".

3. Letter R-6180-2010, dated 5/17/72, J.D. Bixby to Distribution "A", "Control of Spills of Pollutants or Hazardous Liquids".

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The Vice President-Manufacturing will promote the development of manufacturing methods and procedures to control pollution in keeping with this policy statement.

The Vice President-Materiel will guide and monitor divisional compliance with customer contractual obligations which require subcontractor action for pollution control.

The Vice President-Government Contracts will guide and monitor contractual relationships with government customers concerning pollution control requirements.

The corporate Director of Facilities will promote design and development of economic pollution control facilities. He will provide for liaison with industry associations and with state and local regulatory agencies concerning pollution control matters affecting more than one group/division. He will also monitor policy compliance and provide necessary interpretations.

Each group/division manager is responsible for implementing pollution control measures in his operations consistent with the intent of this policy. He is responsible for providing, operating and maintaining pollution control equipment and systems consistent with established standards and criteria, and for assuring liaison with state and local regulatory agencies, directly or through the corporate Director of Facilities, as appropriate.

William M. Allen

IV. RESPONSIBILITIES

A. Group Functional Executives

Affected Group Functional Executives will develop and maintain procedures, directives, and functional standards in support of this procedure for their respective functional areas in coordination with the CAG Environmental Pollution Control Committee.

Provide for support of the CAG-Environmental Pollution Control Committee.

Contract Administration

Formulate, coordinate, and integrate approved environmental pollution control procedures related to contracts with Group customers.

Coordinate, interpret, and negotiate Group customer contractual provisions relating to environmental pollution control.

Establish and maintain appropriate communications and records to ensure the dissemination, preservation, and continuity of knowledge related to environmental pollution control in Group customer contractual matters.

Coordinate and advise other division organizations, when requested, on legal and contract matters.

Engineering

Learn of pending or possible pollution regulations that may or will affect the design, testing or in-service use of the Group's products as far in advance as possible, such that maximum time will be available to:

1. Help assure that any regulations which are established are reasonable, realistic and possible of compliance by The Boeing Company.

2. Develop suitable materials, processes and test methods.

Develop materials and processes consistent with product quality and economical operations to the extent that such are needed to achieve compliance with pollution control regulations.

In the development of process and material specifications always consider the environmental pollution control aspects.

IV. RESPONSIBILITIES (continued)

Coordinate and advise other Group organizations, when requested, on procurement legal and contract matters.

Manufacturing

Formulate, coordinate, and integrate approved environmental pollution control procedures related to the manufacturing of Group products.

Conduct approved programs for the development of manufacturing methods and procedures appropriate to Group environmental pollution control objectives.

Establish and maintain appropriate communications and records to ensure the collection, dissemination, preservations, and continuity of knowledge related to environmental pollution control in the manufacturing of Group products.

Quality Control

Monitor the formulation, coordination and integration of approved environmental pollution control procedures to ensure preservation of the product quality.

Perform analysis to isolate, identify and monitor waste liquid pollutants to insure compliance to applicable requirements.

B. Divisions/Branches - Managers

Division/Branch Managers will plan for and implement the provisions of this procedure and related directives, functional standards and procedures within their branch, and are responsible for the following:

1. Establish a focal point for environmental pollution control administration.

2. Establish such committees and/or organizational alignment as necessary to implement this procedure and provide support to the CAG-Environmental Pollution Control Committee.

3. Assure proper liaison with regulatory agencies directly or through the Director of Facilities - Program Services Branch as appropriate.

C. CAG-Environmental Pollution Control Committee

Develop Group objectives; develop Group procedures to satisfy Corporate and Group objectives.

Review and evaluate programs to carry out Group objectives; recommend procedures and specific programs considered necessary to meet Group objectives.

Attachment to
Memo R-6180-2010
May 17, 1972

CONTROL OF SPILLS

OF POLLUTANTS OR HAZARDOUS LIQUIDS

707/727/737 DIVISION

Task	Responsible Organization
1. Immediately report a spill of any pollutant or hazardous material which may enter a sewer system, surface water, or which may endanger life or property to the Boeing Emergency Dispatcher, phone number: Renton Complex - 7-2222 Boeing Field - 5-2222 Spares Support Center, Kent - 3-2222	Using Organization
2. In order, inform the following organizations: Security-Fire Protection; Facilities - Plant Services Dispatcher; Facilities - Plant Engineering. Representatives from these organizations will proceed immediately to the location of the spill.	Boeing Emergency Dispatcher
3. Take whatever action possible to prevent material from entering sewer system until help arrives such as: seal drain - divert material with rags and Speedy-Dri, etc. Do not flush with water.	Using Organization
4. Determine if situation endangers life or property. If it does, take charge and direct the control and clean-up effort. Do not flush to sewer unless absolutely necessary.	Security-Fire Protection
5. Determine method of neutralization and treatment, if necessary, as requested by Security-Fire Protection or Facilities Plant Services.	Quality Control
6. During emergency, provide assistance as required to Security-Fire Protection. If life or property is not in jeopardy, take charge, contain and clean up the spill.	Facilities Plant Services

J15-047

5.0.1 CONTROL PLAN - GENERAL

PLANT LOCATION

The Boeing Field operations of the Boeing Commercial Airplane Company occupy the northwestern portion of King County-owned Boeing Field. Boeing Field is located on the southerly limit of the City of Seattle and on the east side of the Duwamish River. All surface drainage goes into the Duwamish River.

SECURITY

All Boeing-owned Facilities are enclosed by an 8' chain link fence. Access to the plant areas is rigidly controlled by armed security forces. Admittance is restricted to Boeing employees, those having special admittance badges, such as contractor personnel and visitors when escorted by Boeing personnel. Military flight personnel from transient aircraft and customer airline personnel have acess to certain flight operations buildings and training buildings, but are denied access to other areas of the field.

Security officers and Fire Department inspectors make inspection of all plant areas on a regular basis. They have been instructed to check for pollution hazards and to report any potential problems.

PORTABLE DRUM SHELTERS

Portable drum shelters have been designed and built to store oil and other polluting or hazardous materials. These shelters are constructed of steel, have three sides and a roof. The base is leak-proof and designed to contain about 200 gallons of liquid, should a drum rupture or leak. The shelters are equipped with a static grounding system.

TESTING PROGRAM

Chemicals, oils and other unknown liquids contained in no-drain sumps or diked areas, are handled by tankers provided by Seattle Services Division, located at Plant II. These liquids are checked by Quality Control to determine whether the liquids can be disposed of in a sanitary sewer or sent to a commercial disposal firm.

D1 4100 7740 ORIG.8/71

5.1 FUEL TRANSFER OPERATIONS - BOEING FIELD

LOCATION

Boeing Field

DESCRIPTION

Fuel Tanks and Tank Farm (B-52)

There are three tanks of 40,000 gallons capacity each. They are of steel, circular, underground, and covered with a concrete slab. All pumps, controls, switches and other electric devices are explosion proof.

The storm drains in the tank farm are equipped with oil detention baffles and they drain into an 80,000 gallon capacity oil separator, before discharging to the storm sewer.

Fuel Tankers

There are six tanker-trucks supplying fuel to the Commercial Airplane Company operations on Boeing Field. Two of these tankers have capacity of 10,000 gallons and four have capacity of 5,000 gallons each. The tankers are equipped with float-actuated high-level shut off devices with automatically close off the fuel flow into the tankers to prevent overfilling. In addition, the tankers are equipped with a pre-check sequencer or a high-level alarm to prevent overfilling. The hoses are equipped with dry-break couplings to prevent loss of fuel when disconnecting the couplings. These couplings are designed so that fuel-flow cannot start until the nozzles are firmly connected to the airplane. The 10,000 gallon tankers have electrical interlocks to the ignition of the tanker to prevent moving the tanker unless the hoses are disconnected from the airplane or the fuel nozzles at the tank farm. Each tanker is equipped with a hook on the front bumper so that it can be towed away from an airplane in the event of an emergency.

5.1 FUEL TRANSFER OPERATIONS - BOEING FIELD (Continued)

5.1.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION

PLANNED SPILL PROTECTION

Install oil trap in two catch basins on apron, east of the 3-808 building.

5.1.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by means of oil absorbent material that is available. Use the fire department radio to summons additional help, should it be needed.

TRAINING

Training will consist of instructing the fueling personnel in the need for spill prevention, review of location of the drains in the areas, and the techniques for containing spills.

5.2 UNDERGROUND OIL STORAGE TANKS FOR STEAM PLANT

LOCATION

South side of the 3-374 building.

DESCRIPTION

These two tanks are cylindrical shape, of steel construction, with 20,000 gallon capacity each. The piping consists of fill, suction, return and vent lines. The tanks are filled from vendor tank-trucks through fill pipes located flush with the concrete slab. The tanks and piping, other than the vent, are underground.

5.2.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These tanks are covered with a concrete slab, and all piping is protected from vehicular damage by guard rails. The depth of oil in each tank is determined by the steam plant operator, prior to filling and the amount of oil that each tank can safely hold is determined. This information is provided to the tank-truck operator, who can meter the amount of fuel going to the tanks. This method prevents the possibility of over-filling the tank. The tank-truck driver "stands-by" during the filling operation, and is available to shutoff the fuel and provide assistance in the event of a spill.

TRAINING

The steam plant operators are responsible for monitoring the filling of these two tanks. The operators are familiar, through training and experience, with the precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

A container of oil absorbent material, with plastic sheeting, will be placed near the oil tanks, for use in an emergency. Provide sign "In event of oil spill, plug drain in pipe chase located at this point".

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.2) Underground Oil Storage Tanks for Steam Plant

LOCATION: South Side, 3-374 Building.

DESCRIPTION: 20,000 Gallon, Steel, Cylindrical, Underground.

HAZARD:

1. Ruptured tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Spill while connecting or disconnecting fill hoses.
5. Tanker-truck tank rupture.
6. Over-filling tanks.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Seal catch basin south of 3-374 building.
3. Seal oil line chase, south side of 3-374 building.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.3 UNDERGROUND OIL STORAGE TANK FOR HOT WATER BOILER (Con't.)

5.3.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The tank-truck operator monitoring the filling operations are to use plastic sheeting and oil absorbent material to contain any spill. Major effort should be directed towards preventing oil from entering the catch basin located in the yard east of the fuel tank. The emergency plant dispatch system or the Plant Services dispatcher will be used to get additional help should it be required.

TRAINING

Training will consist of a review of spill control measures to be taken to prevent entry of oil into the storm drains, and the methods to be used to get additional help, should it be required.

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5.4 UNDERGROUND OIL STORAGE TANK FOR STEAM BOILER

LOCATION

West side of the 3-808 building.

DESCRIPTION

This tank is cylindrical shape, of steel construction, with 3,000 gallon capacity. The piping consists of fill, suction, return and vent lines. The tank is filled from vendor tank-trucks through a fill pipe located flush with the concrete slab. The tank and piping, other than the vent, are underground.

5.4.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This tank is covered with a concrete slab, and all piping is protected from vehicular damage. The depth of oil is determined by the steam plant operator, prior to filling, and the amount of oil that each tank can safely hold is determined. This information is provided to the tank-truck operator, who can meter the amount of fuel going to the tanks. This method prevents the possibility of over-filling the tank. The tank-truck driver "stands-by" during the filling operation, and is available to shutoff the fuel and provide assistance in the event of a spill.

TRAINING

The vendor tank-truck operator is responsible for monitoring the filling of this tank. These operators are familiar, through training and experience, with the precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

A container of oil absorbent material, with plastic sheeting, will be placed near the oil tank for use in an emergency.

D1 4100 7740 ORIG. 8/71

5.5.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The laboratory personnel operating the facility, as well as the tank-truck driver during filling operations, will use the oil absorbent material and the plastic sheeting to contain any spill, and to seal-off the catch basins in the area. The emergency dispatch system or the plant services dispatcher will be used to get additional help, should it be required.

TRAINING

Operating personnel will be given instruction in the location of drains, and methods of containing a spill.

5.5 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (GREEN HORNET)

LOCATION

West of 3-306 Building

DESCRIPTION

The facility is composed of three underground tanks of 10,000 gallons capacity each, plus pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through a pressure fitting, and fuel is delivered by vendor or company tank-truck. This facility is used primarily as a fuel source for engine test stands and other test operations in the immediate vicinity.

5.5.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The pumps, valves, and controls are located in an area that is inaccessable to vehicular traffic. The tanks are underground and covered by a concrete slab. The piping to the nearby test facilities is underground.

TRAINING

Laboratory operations personnel are responsible for operating the system during tests. They are familiar, through experience and training, with the safe operation of the system and with precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

Containers of oil absorbent material, with plastic sheeting, will be provided near this facility for use in an emergency.

5.6 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (F SLAB)

LOCATION

West of 3-626 Building

DESCRIPTION

This facility is composed of four underground tanks of 12,000 gallon capacity each, plus pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through pressure fittings and fuel is delivered by vendor or company tank-trucks. This facility is used primarily to test fuel systems components, such as valves, regulators and nozzles. A control building and a test stand is also used in conjunction with the test facility.

5.6.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The piping to the test stand is underground. The control building contains fuel, depth gages, rate of flow gages and controls for the operations of the system. The operator also has good visibility of both the test stand and the fuel facility so that he can shut down the system should trouble develop. Catch basins draining the area around the F Slab, discharge into an oil separator.

TRAINING

Laboratory operations personnel are responsible for operating the system during tests. They are familiar through experience and training, with the safe operation of the system and with precautions necessary to prevent spills.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.6) Underground Fuel Storage Tanks and Pumping Facility (F Slab)

LOCATION: West of 3-626 Building.

DESCRIPTION: Four 12,000 Gallon Underground Tanks with Pumping Facilities, Control Building and Test Stand.

HAZARD:

1. Over-filling tanks.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill-truck, or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal-off catch basins as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.4) Underground Oil Storage Tank for Steam Boiler

LOCATION: West Side, 3-808 Building.

DESCRIPTION: 3,000 Gallon, Steel, Cylindrical, Underground

HAZARD:

1. Ruptured tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill-hose.
6. Over-filling tank.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Seal catch basin, southeast of fuel tank.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.5 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (GREEN HORNET)

LOCATION

West of 3-306 Building

DESCRIPTION

The facility is composed of three underground tanks of 10,000 gallons capacity each, plus pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through a pressure fitting, and fuel is delivered by vendor or company tank-truck. This facility is used primarily as a fuel source for engine test stands and other test operations in the immediate vicinity.

5.5.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The pumps, valves, and controls are located in an area that is inaccessable to vehicular traffic. The tanks are underground and covered by a concrete slab. The piping to the nearby test facilities is underground.

TRAINING

Laboratory operations personnel are responsible for operating the system during tests. They are familiar, through experience and training, with the safe operation of the system and with precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

Containers of oil absorbent material, with plastic sheeting, will be provided near this facility for use in an emergency.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.5) Underground Fuel Storage Tanks and Pumping Facility (Green Hornet)

LOCATION: West of 3-306 Building.

DESCRIPTION: Three 10,000 Gallon Underground Tanks with Pumping Facilities.

HAZARD:

1. Over-filling tanks.
2. Broken fuel lines or fittings.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill truck or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal off catch basin as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

J18-047

5.6 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (F SLAB)

LOCATION

West of 3-626 Building

DESCRIPTION

This facility is composed of four underground tanks of 12,000 gallon capacity each, plus pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through pressure fittings and fuel is delivered by vendor or company tank-trucks. This facility is used primarily to test fuel systems components, such as valves, regulators and nozzles. A control building and a test stand is also used in conjunction with the test facility.

5.6.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The piping to the test stand is underground. The control building contains fuel, depth gages, rate of flow gages and controls for the operations of the system. The operator also has good visibility of both the test stand and the fuel facility so that he can shut down the system should trouble develop. Catch basins draining the area around the F Slab, discharge into an oil separator.

TRAINING

Laboratory operations personnel are responsible for operating the system during tests. They are familiar through experience and training, with the safe operation of the system and with precautions necessary to prevent spills.

D1 4100 7740 ORIG.8/71

J15-047

5.6 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (F SLAB) (Continued)

5.6.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

Guard rails will be placed on three sides of this slab to prevent the possibility of vehicular damage to the piping. Signs identifying the tank number of each tank, will be placed on each fill-pipe fitting. A container of oil absorbent material with plastic sheeting, will be provided near this facility, for use in an emergency. Guard posts will be installed on two sides of the test stand to prevent the possibility of vehicular damage to the exposed piping.

5.6.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The laboratory personnel operating the facility, as well as the tank-truck driver during filling operations, will use the oil absorbent material and the plastic sheeting to contain any spill, and to seal off any catch basins in the general area. The emergency dispatch system or the Plant Services dispatcher will be used to get additional help, should it be required.

TRAINING

Operating personnel will be given instructions in the location of drains and methods to be used to contain a spill.

D1 4100 7740 ORIG.3/71

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.6) Underground Fuel Storage Tanks and Pumping Facility (F Slab)

LOCATION: West of 3-626 Building.

DESCRIPTION: Four 12,000 Gallon Underground Tanks with Pumping Facilities, Control Building and Test Stand.

HAZARD:

1. Over-filling tanks.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill-truck, or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal-off catch basins as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.7 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (G SLAB)

LOCATION

West of 3-626 Building

DESCRIPTION

This facility is composed of four underground tanks of 12,000 gallon capacity each, plus pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through pressure fittings and fuel is delivered by vendor or company tank-trucks. Fuel can also be pumped from the F Slab facility; this facility is used primarily as a standby fuel-holding facility for the F Slab.

5.7.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The piping to the F Slab is underground. The facility is located in a relatively isolated area with little or no vehicular traffic. Catch basins draining this area discharge into an oil separator.

TRAINING

Laboratory operations personnel are responsible for operating the system during tests. They are familiar, through experience and training with the safe operation of the system and with precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

Signs identifying the tank number of each tank will be placed on each fill-pipe fitting. A container of oil absorbent material with plastic sheeting, will be provided near this facility for use in an emergency.

5.7 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (G SLAB) (Continued)

5.7.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The laboratory personnel operating the facility, as well as the tank-truck driver during filling operations, will use the oil absorbent material and the plastic sheeting to contain any spill, and to seal-off any catch basins in the general area. The emergency dispatch system or the Plant Services dispatcher will be used to get additional help, should it be required.

TRAINING

Operating personnel will be given instructions in the location of the drains and methods of containing a spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.7) Underground Fuel Storage Tanks and Pumping Facility (G Slab)

LOCATION: West of 3-626 Building.

DESCRIPTION: Four 12,000 Gallon Underground Tanks with Pumping Facilities.

HAZARD:

1. Over-filling tanks.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disc onnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill-truck, or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal-off catch basins as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.8 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (SALVAGE SLAB)

LOCATION

South of 3-626 Building

DESCRIPTION

This facility is composed of two 5,000 gallon tanks and one 10,000 gallon underground tanks, with pumps, valves, regulators and other control devices. The tanks are steel, cylindrical, and covered with a concrete slab. Filling is through a gravity fill-pipe. This facility receives fuel from aircraft tests, which cannot be used to fuel flight aircraft. This fuel is pumped to three test stands, for operation of test engines or engines used to support additional types of tests.

5.8.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These tanks are adequately protected from vehicular damage. Piping to two of the engine test facilities fueled from this facility, is underground. Piping to the third facility is overhead, however; it is in a relatively isolated area, outside vehicular traffic, except lift trucks.

TRAINING

The personnel responsible for operating this facility are laboratory operations personnel. They are familiar through experience and training, with the safe operation of the system and with precautions necessary to prevent spills.

PLANNED SPILL PROTECTION

That section of the pipe that is overhead, will be striped with yellow and black paint to make it more easily identifiable. A suitable caution sign will be provided for this area. The portable moisture separator occasionally used as a part of this system, will be disconnected, and the hose connections plugged. A container of oil absorbent material with

5.8 UNDERGROUND FUEL STORAGE TANKS AND PUMPING FACILITY (SALVAGE SLAB) (Continued)

5.8.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION (Continued)

plastic sheeting, will be provided near this facility, for use in an emergency.

5.8.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The laboratory personnel operating the facility, as well as the tank truck driver during filling operations, will use the oil absorbent material and the plastic sheeting to contain any spill, and to seal-off any catch basins in the general area. The emergency dispatch system or the Plant Services dispatcher will be used to get additional help, should it be required.

TRAINING

Operating personnel will be given instructions in the location of the drains and methods to be used to contain a spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.8) Underground Fuel Storage Tanks and Pumping Facility (Salvage Slab)

LOCATION: South of 3-626 Building.

DESCRIPTION: Two 5,000 and One 10,000 Underground Tanks, plus Pumping Facility.

HAZARD:

1. Over-filling tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill-truck, or shutting down pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal-off catch basins as required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

J15-047

5.9 GASOLINE STORAGE TANK AND PUMP

LOCATION

Yard, Northwest of 3-810 Building.

DESCRIPTION

The tank is cylindrical, of steel construction with 1,000 gallon capacity. The piping consists of fill, suction and vent lines. The tank is filled from vendor tank-trucks through a fill-pipe located flush with the concrete slab. The tank and piping, other than the vent, are underground.

The pump is a conventional service station type electric pump, with hose and nozzle. The unit is mounted on a concrete island. The controls to the pump are locked and the key kept in the Plant Services office.

5.9.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fill-pipe to the tank and the gasoline pump are a considerable distance from the nearest storm drain. The pump is well protected against damage from a vehicle.

TRAINING

The operators dispensing diesel oil have been instructed in the operation of the pump and safeguards to be used to prevent spills. Further training will be given as required to maintain the required skill level.

PLANNED SPILL PROTECTION

No additional protection is felt necessary.

D1 4100 7740 ORIG.3/71

5.9 GASOLINE STORAGE TANK AND PUMP (Continued)

5.9.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by shutting off the source of the spill and placing absorbent material around the spill.

TRAINING

Training will consist of familiarization of personnel with the drainage areas location of absorbent material and plastic sheeting and methods of containing a spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.9) Gasoline Storage Tank and Pump

LOCATION: Yard, Northwest of 3-810 Building.

DESCRIPTION: One Tank, 1,000 Gallon, Underground

HAZARD:

1. Ruptured tank.
2. Broken lines, hoses or fittings on tank or pump.
3. Over-filling tank by vendor tanker-truck.
4. Over-filling vehicles.
5. Failure of tanker-truck hose, fittings or tank.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by use of absorbent material and plastic sheeting.
3. Close storm drain in street, east of gas pump.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

J15-047

5.10 FLIGHT SIMULATOR HYDRAULIC SYSTEM

LOCATION

3-830 and 3-831 Buildings.

DESCRIPTION

A hydraulic system is used to power the flight simulators. This hydraulic system consists of a 2,000 PSI pumping system, with controls, accumulators, and tanks. There are four simulators, each containing its own hydraulic system.

5.10.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The hydraulic systems are enclosed in separate rooms. All utility chases in these rooms have no outlets, so that a spill into a chase would be retained in the chase. The floor drains in these rooms have riser extentions to prevent any spill from entering a floor drain. The hydraulic systems are located in areas that are manned during the time that the hydraulic systems are operating.

TRAINING

The personnel operating these flight simulator systems are experienced and well trained individuals. Further training will be given in spill prevention techniques, as required.

PLANNED SPILL PROTECTION

Plug the floor drain in the 737 flight simulator room, west side. Attach rubber seals to lower portion of doors, north side of hydraulic pump room, 747 simulator.

D1 4100 7740 ORIG.8/71

5.10 FLIGHT SIMULATOR HYDRAULIC SYSTEM (Continued)

5.10.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Personnel monitoring the flight simulator operation are to take whatever action is necessary to shut-off the flow of hydraulic oil, consistent with the safety of personnel in the flight simulator. This action will include shutting down the hydraulic system to reduce pressure on the system. The spill is to be contained, using oil absorbent materials as appropriate. Nofify Plant Services and emergency dispatcher if additional support is needed.

TRAINING

Training will consist of a review of spill control measures to be taken in the event of a hydraulic oil spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.10) Flight Simulator Hydraulic System

LOCATION: 3-830 and 3-831 Buildings.

DESCRIPTION: Three hydraulic systems, consisting of pumps, accumulators, controls and tanks, that are used to provide power to the flight simulators.

HAZARD:

1. Oil spill when adding or removing oil to the system.
2. Broken hydraulic hose or fitting.

ACTION REQUIRED IN EVENT OF SPILL:

1. If spill is from a hydraulic hose or fitting, shut down system, consistent with safety of personnel in the flight simulator.
2. Contain spill by means of oil absorbent materials.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.11 FLOOR DRAINS AND AIR WASHERS TRENCHES

LOCATION

Paint Hangar, 3-369 Building

DESCRIPTION

The paint hangar is equipped with a high capacity air exhaust system which is equipped with air washers. Water is circulated through spray nozzles in the washers and through trenches located in the floor of the building. The over-flow of these trenches, drains to a lift station. This lift station is an automatic, float-controlled duplex pumping unit, which discharges through manually controlled valves, either into a 5,000 gallon underground holding tank, or to the sanitary sewer.

Any spill into any of the floor trenches or the floor drains of the building would go to this duplex lift station and, depending upon the position of the discharge valves, could be discharged to the sanitary sewer.

5.11.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The possibility of a fuel spill in this hangar is extremely remote. Normally, only completely defueled airplanes are brought into this hangar. No fuel storage is allowed. Because of the rigid fire protection requirements, airplanes containing fuel are carefully controlled during the time they are in the hangar, and are allowed in the hangar for only a minimum length of time. Any spill that does occur, would most likely be observed by the painters working on or near the airplanes. Oil absorbent material is available.

TRAINING

The painting crews will be instructed in the need for tight control of paints and other potential contaminents that are used in the painting process, and also in the need to be observant in checking for leaking fuel or oil from airplanes in the hangar.

5.11 FLOOR DRAINS AND AIR WASHERS TRENCHES (Continued)

5.11.1 CONTROL PLAN (Continued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION

The floats that control operation of the sump pump will be adjusted to maintain a minimum of 36" depth in the sump. In this way, any floatable liquids, such as oil or fuel, would normally be retained in the sump. This three-foot depth represents a capacity of about 450 gallons.

Plug drains in trench in flammable storage area, west side of paint hangar. (Use trench as a no-drain sump.)

5.11.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by shutting off the source of the spill and placing absorbent material around the spill. If spilled material should get into the underfloor trench system, shut down the sump pumps located in the equipment room, Col. K-6, and call emergency dispatcher on 5-2222.

TRAINING

The painting crews will be instructed in the operation of the fume scrubbers, the location of the sump pumps and its controls, and the methods of containing a spill should it occur.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.11) Floor Drains and Air Washers Trenches

LOCATION: Paint Hangar, 3-369 Building.

DESCRIPTION: Floor drains, and trenches which are a part of the air-handling and fume scrubbing system.

HAZARD:

1. Spill of oil or fuel from airplane, or paint from painting operations, into floor drain or fume scrubber trench.

ACTION REQUIRED IN EVENT OF SPILL:

1. Shut-off source of spill.
2. Contain spill on floor with oil absorbent material and plastic sheeting.
3. If spill enters floor drain or trench, shut-off sump pump in equipment room, southeast corner of hangar at Col. K-6.
4. Notify emergency dispatcher on ext. 5-2222.

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CALL EMERGENCY NUMBER 5-2222

5.12 STEAM PLANT

LOCATION

3-374 Building

DESCRIPTION

This facility includes two steam generators, with the necessary controls, fuel and steam distribution and water treatment systems. The steam generators are dual fuel, with natural gas the primary fuel, and #200 or #300 oil, the secondary fuel. This facility is manned whenever the steam plant is operating.

Included in this facility is the foam storage tank for the paint hangar fire-protection system.

5.12.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This is a modern, up-to-date facility, with fail safe devices to shut down the flow of fuel oil, should there be a flame failure at the burners. The fuel systems are designed and installed to meet applicable codes and standards. The equipment is rated to withstand the pressures and temperatures to which it may be subjected. Specific items are inspected at regular intervals, to minimize failures. Defective parts are replaced.

TRAINING

The steam plant operating personnel are experienced and familiar with the equipment and are licensed. They have been instructed in the safeguards to be used to prevent spills and to contain them should they occur.

PLANNED SPILL PROTECTION

No additions are planned for the fuel systems, or the foam storage system.

5.12 STEAM PLANT (Continued)

5.12.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Isolate the cause of the spill, and if operating conditions allow, shut down the pumps supplying oil to the spill. Contain the spill with absorbent material. Switch to gas if necessary.

For a spill from the foam storage system, close-off the source of the spill, and contain the spill with absorbent material. Notify the Fire Department if any significant quantity of foam has spilled, or if the foam system is to be inoperative for any length of time.

TRAINING

The operating personnel will be given training in spill prevention/detection, including location of all drains.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.12) Steam Plant

LOCATION: 3-374 Building.

DESCRIPTION: Two steam generators, with controls, fuel and steam distribution systems, and water treatment systems.

HAZARD:

1. Broken fuel oil line or fitting.
2. Leakage of oil into condensate system.
3. Valve opened in error.

ACTION REQUIRED IN EVENT OF SPILL:

1. Contain spill by means of oil absorbent material.
2. Close-off source of oil. *
3. Seal floor drains.

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* If burning oil, evaluate effect of closing off source of oil on steam plant operations. Switching to natural gas may be necessary.

J18-047

5.13 HYDRAULIC REPAIR FACILITY

LOCATION

North End, 3-810 Building

DESCRIPTION

This shop area provides maintenance service for the variety of hydraulic oil carts and units used on the field. The facility contains drums of various types of oil used in servicing the equipment.

5.13.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This facility is located inside a building that is curbed, with the exception of the door openings.

TRAINING

The personnel working in this area will be given instruction in the methods of containing a spill, should it occur.

PLANNED SPILL PROTECTION

The floor drain near the drum storage will be sealed to prevent any spill from going into the drain.

5.13.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by means of oil absorbent materials and plastic sheeting.

D1 4100 7740 ORIG. 3/71

5.13 HYDRAULIC REPAIR FACILITY (Continued)

5.13.2 COUNTERMEASURES PLAN (Continued)

TRAINING

Training will consist of instructing the operating and maintenance personnel in the need for spill prevention and control, and the techniques for containing spills.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.13) Hydraulic Repair Facility

LOCATION: North End, 3-810 Building.

DESCRIPTION: Maintenance Area for Servicing Hydraulic Units and Carts.

HAZARD:

1. Over-turned or leaking drum of oil.
2. Broken oil hoses or fitting.
3. Leaking tanks on hydraulic units.
4. Over-filling hydraulic units.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by means of oil absorbent material and plastic sheeting.

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CALL EMERGENCY NUMBER 5-2222

5.14 AIR COMPRESSORS

LOCATION

3-302 Building

DESCRIPTION

This facility contains three 300 PSIG air compressors and one 150 PSIG air compressor, receiver tanks, after-coolers, moisture separators and controls. The cooling water from one of the 300 PSIG compressors discharges into a floor trench which goes to the flume. Cooling water for the other compressors discharges into a trench outside the building, which goes to the flume. The air receiver blow-downs go to the flume. The flume discharges into the Duwamish River.

5.14.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

No oil is stored in the compressor house, except minor amounts used for lubricating the compressors. Oil required for changing the crank case oil in the compressors is brought to the oil house for this purpose and the used oil is removed from the area.

The compressor house is manned by a trained operator, whenever the compressors are operating.

TRAINING

The compressor operators are experienced personnel, thoroughly trained in all aspects of the compressor operations. Further training will be given to familiarize them with pollution possibilities and preventative measures that may be taken to reduce chances of a spill.

PLANNED SPILL PROTECTION

Because the blow-down from the air receivers contains a significant amount of oil, a detention tank will be installed to separate this oil.

All air receiver blow-downs will be rerouted to discharge into the detention tank.

5.14 AIR COMPRESSORS (Continued)

5.14.1 CONTROL PLAN (Coneinued)

EXISTING SPILL PROTECTION (Continued)

PLANNED SPILL PROTECTION (Continued)

The sump pump discharge in the pit in the 150 PSIG compressor room will be rerouted to discharge into this detention tank.

5.14.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by means of oil absorbent material. Shut-off the source of the spill. Call the emergency dispatcher 5-2222, should oil get into the drainage system going to the flume.

TRAINING

Training will consist of instructing the compressor operating personnel in the techniques of containing a spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.14) Air Compressors

LOCATION: 3-302 Building.

DESCRIPTION: Three 300 PSIG air compressors and one 150 PSIG air compressor, plus the air receivers, after-coolers, moisture separators and controls.

HAZARD:

1. Broken line or fitting in compressor lubrication system.
2. Accidentally spilling oil while filling lubricators on compressors, filling crank case or draining crank case on compressors.
3. Oil from air receivers getting into drains going into flume.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by means of oil absorbent materials, plastic or other suitable materials.

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CALL EMERGENCY NUMBER 5-2222

5.15 YORK REFRIGERANT FACILTIY

LOCATION

3-318 Building

DESCRIPTION

This facility consists of compressors, pumps, tanks and controls for compressing Freon 22 in a refrigerant system. The Freon chills an ethylene-glycol brine that can be pumped to various test points for specialized tests.

5.15.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This facility is manned by experienced and licensed operators whenever the system is being operated. The compressor room is enclosed in a concrete-walled room, with the grade of the floor below the grade of the door openings. Any spill would be contained within the room.

The area is restricted to selected Boeing Employees, and only the operators are authorized to operate any of the equipment or its controls.

TRAINING

The operators of this refrigerant facility are licensed by the City of Seattle. Further training will be given if required, to review spill prevention techniques.

PLANNED SPILL PROTECTION

The floor drains in the compressor room will be equipped with 12" risers to prevent any spill from going into the drain.

5.15 YORK REFRIGERANT FACILITY (Continued)

5.15.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by means of oil absorbent material. Close-off the source of the spill.

TRAINING

Training will consist of instructing the operating personnel in the techniques for containing spills.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.15) York Refrigerant Facility

LOCATION: 3-318 Building.

DESCRIPTION: Compressors, pumps, tanks and controls for Freon 22, ethylene-glycol refrigerating system.

HAZARD:

1. Broken line or fitting.
2. Ruptured tank.
3. Leaking pump seals.

ACTION REQUIRED IN EVENT OF SPILL:

1. Contain the spill by means of oil absorbent materials and plastic sheeting.
2. Close-off source of spill.

DATE: 6/15/74

REVISION/UPDATE NO.

CALL EMERGENCY NUMBER 5-2222

J15-047

5.16 STEAM BOILER

LOCATION

East Side of 3-808 Building

DESCRIPTION

This boiler is oil fired, and is used to provide steam to the heating system of the 3-808 building. It is supplied with heating oil from a 3,000 gallon underground storage tank located east of the building. (See Item #4.)

5.16.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This boiler is enclosed in a room which is below the existing grade of the adjoining rooms, and of the adjoining yard area. Any spill within the boiler room would be contained within the room. The boiler burner is designed to shut down the oil pumps, should there be a flame failure.

TRAINING

No additional training is considered necessary.

PLANNED SPILL PROTECTION

Plug the floor drain at the south east corner of the boiler. Repipe the sight glass and water column blow-down lines to the funnel drain on the south wall of the boiler room.

D1 4100 7740 ORIG.8/71

J15-047

5.16 STEAM BOILER (Continued)

5.16.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

If the spill is on the pressure side of the oil pump, shut down the pump. Contain the spill within the room by means of oil absorbent materials.

TRAINING

Training will be provided as felt necessary.

D1 4100 7740 ORIG.8/71

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.16) Steam Boiler

LOCATION: East Side of 3-808 Building.

DESCRIPTION: Oil fired boiler, to provide steam for space heating.

HAZARD:

1. Broken oil line on pressure side of pump.

ACTION REQUIRED IN EVENT OF SPILL:

1. Shut down oil pump.
2. Contain spill by means of oil absorbent materials.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

J15-047

5.17 HOT WATER BOILER

LOCATION

East Side of 3-830 Building

DESCRIPTION

This hot water boiler is oil fired and is used to provide hot water for the space heating system of the 3-830 building. It is supplied with heating oil from a 2,000 underground storage tank located east of the building. (See Item #3).

5.17.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This boiler is enclosed in a room which is slightly below the grade of the adjoining rooms and the adjoining yard area. The boiler burner is designed to shut down the oil pump should there be a flame failure.

TRAINING

No additional training is considered necessary.

PLANNED SPILL PROTECTION

Install risers on two floor drains, west side and north side of the boiler. Re-pipe the blow-down and other drains into these risers.

5.17.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

If the spill is on the pressure side of the oil pump, shut down the pump. Contain the spill by means of oil absorbent materials.

D1 4100 7740 ORIG.3/71

5.17 HOT WATER BOILER (Continued)

5.17.2 COUNTERMEASURES PLAN (Continued)

TRAINING

Training will be provided as felt necessary.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.17) Hot Water Boiler

LOCATION: East Side of 3-830 Building.

DESCRIPTION: Oil fired hot water boiler, to provide hot water for space heating.

HAZARD:

1. Broken oil line on pressure side of pump.

ACTION REQUIRED IN EVENT OF SPILL:

1. Shut down oil pump.
2. Contain spill by means of oil absorbent materials.

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CALL EMERGENCY NUMBER 5-2222

J15-047

5.18 VAPOR DEGREASER

LOCATION

Non-destructive test laboratory, north end 3-811 Building.

DESCRIPTION

This degreaser is a steam heated unit, with a nominal capacity of 100 gallons of trichloroethylene. It is approximately 2' wide X 5' long by 5' high. It is used on the average of three times per week. The heat-up time is approximately 30 minutes. It is filled by Plant Services personnel, by hoisting a 55 gallon drum over the degreaser, opening a valve when the drum is in the correct position.

5.18.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

This vapor degreaser is located in an isolated part of the building and receives relatively little use-age. The degreaser is provided with a tight fitting cover. There are no floor drains in the laboratory in the vicinity of the degreaser.

TRAINING

The Plant Services personnel who fill the degreaser, and the laboratory personnel who use the degreaser, are familiar with the operation and filling of the degreaser. They will be instructed in the precautions necessary to reduce risk of spills.

PLANNED SPILL PROTECTION

No additional spill protection is felt necessary for this installation.

D1 4100 7740 OR1G.3/71

5.18 VAPOR DEGREASER (Continued)

5.18.2 COUNTERMEASURES PLAN

The countermeasures effort will be directed to containing any spill that might occur.

RESPONSE/ACTION

The oil absorbent material available in the area, will be used to contain a spill should it occur. The emergency dispatcher or the Plant Services dispatcher will be used to get additional help when required.

TRAINING

Instruct shop personnel in methods of containing a spill.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.18) Vapor Degreaser

LOCATION: Non-destructive test laboratory, north end 3-811 building.

DESCRIPTION: Steam heated unit, 100 gallon capacity.

HAZARD:

1. Leaking trichloroethylene drum, during filling operation.
2. Broken fitting on vapor degreaser.

ACTION REQUIRED IN EVENT OF SPILL:

1. If drum is leaking, attempt to plug leak with wiping cloths or other materials available, or rotate drum to where the leak is on top and leaking stops.
2. If degreaser is leaking, attempt to plug leak, or place container under leak.
3. Call emergency dispatcher or Plant services dispatcher for additional help. (5-2222)

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CALL EMERGENCY NUMBER 5-2222

J15-047

5.19 FUEL SYSTEM FOR ENGINE-DRIVEN PUMPS, EMERGENCY FIRE PROTECTION WATER SYSTEM

LOCATION

3-397 Building

DESCRIPTION

The stand-by fire protection water system includes two diesel engine-driven centrifugal pumps to provide fire protection water during an electric power outage. These engines are fueled from two 150 gallon tanks located inside the building. These engines are for stand-by emergency use only. They are, however, tested on a monthly basis.

5.19.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL

The tanks are steel, above ground and are located inside a building and protected from any physical damage by their location. They are equipped with a high and low level alarm system to prevent over-filling. The building is curbed with the exception of the door openings. The building also contains a no-drain sump on the west side. These curbs, plus the no-drain sump would most likely retain any spill inside the building.

TRAINING

Plant Services personnel are responsible for the maintenance operation of this auxiiliary water system. They are trained in the operation of the fuel system, and precautions to be taken in the handling of fuel. Further training will be given as required, to maintain the required skill level.

PLANNED SPILL PROTECTION

No additional spill protection is planned at the present time.

D1 4100 7740 ORIG.3/71

5.19 FUEL SYSTEM FOR ENGINE-DRIVEN PUMPS, EMERGENCY FIRE PROTECTION WATER SYSTEM (Continued)

5.19.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

Contain the spill by means of oil absorbent materials and plastic sheeting.

TRAINING

Training will consist of instructing the operating and maintenance personnel in the need for spill prevention and control and the techniques for containing spills.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.19) Fuel System for Engine-Driven Pumps, Emergency Fire Protection Water System

LOCATION: 3-397 Building.

DESCRIPTION: Two 150 gallon diesel oil tanks, and fuel system for diesel engines.

HAZARD:

1. Over-filling tank.
2. Broken fuel lines or fittings.
3. Leak in tank.
4. Broken hose or fittings on tank-truck.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by means of oil absorbent material and plastic sheeting.

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CALL EMERGENCY NUMBER 5-2222

5.20 DRUM STORAGE

LOCATION

Various areas of the Plant.

DESCRIPTION

Various areas throughout the Plant have been designated as drum storage areas, to enable placement of oil supplies close to the point of use. The two principal storage areas are on the west side of the 3-810 building and on the southwest corner of the 3-808 building. Some drums are stored on the west side of the 3-369 building.

These areas provide space for drums on pallets, and stored horizontally on racks.

5.20.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The areas established for drum storage are outside the traffic areas and are reasonably free from danger of vehicular damage.

TRAINING

No additional training is felt necessary at this time.

PLANNED SPILL PROTECTION

Two areas for drum storage are being modified to include dikes and no-drain sumps to contain any spills. Additional drum shelters will be provided.

J15-047

5.20 DRUM STORAGE (Continued)

5.20.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain the spill, and prevent it from reaching any catch basins.

TRAINING

Training will be provided to personnel using these oil storage areas, in the methods of containing a spill and sealing off catch basins.

D1 4100 7740 ORIG.3/71

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.20) Drum Storage

LOCATION: Various areas of the Plant.

DESCRIPTION: Areas specified for the storage of 55 gallon drums of oil and oil derivatives. Some areas are provided with racks for holding drums in a horizontal position.

HAZARD:

1. Ruptured drum.
2. Broken drum faucet.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill with oil absorbent material.
3. Close-off catch basins in vicinity.

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5.21 FIRE TEST FACILITY

LOCATION

Yard Area, Northeast of the 3-222 Building

DESCRIPTION

This fire test facility consists of a diked area, approximately 100' X 150" and an underground oil storage tank and pump. The pit is used for containing several hundred gallons of jet fuel, which is ignited. Fire Department personnel from King County, City of Seattle and Boeing put out the fire, using a variety of foam and spray equipment. The tank and pump are used to store oil for tests.

5.21.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The pit is in an isolated area of the field, and is removed from storm drains. The natural drainage for this area is a natural no-drain sump, where rain and other liquids percolate into the ground.

The oil storage tank is underground. The pump is located a sufficient distance from the fire pit to be protected against fire hazard or damage.

TRAINING

The fire departments operating this system have specific procedures to be followed in using the fire test facility. Guidelines will be issued to the various fire departments as necessary to keep them informed of any changes made to the fire pit operations.

PLANNED SPILL PROTECTION

The dike on the north end of the test pit will be enlarged to provide more protection against any oil being forced from the pit because of water pressure from the fire hose nozzles.

D1 4100 7740 ORIG.3/71

5.21 FIRE TEST FACILITY (Continued)

5.21.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain all oil within the fire test pit during the tests. The last test should allow all the residual oil to burn off before draining the area.

If oil should get outside the test pit, efforts will be made to contain the oil with sand or oil absorbent materials.

TRAINING

Training will consist of sending a memorandum to those fire departments using the facility, outlining the steps to be taken to operate the fire test facility properly to prevent spills and methods of retaining a spill, should it occur.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.21) Fire Test Facility

LOCATION: Yard Area, Northeast of the 3-222 Building.

DESCRIPTION: This fire test facility consists of a diked area, with an underground oil storage tank, a pump and hoses for distributing oil to the test pit.

HAZARD:

1. Broken hose or fitting on pressure side of pump.
2. Spill while filling underground tank from tank-truck.
3. Oil forced over dike by pressure of water from hose during test.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill with oil absorbent material or sand.

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CALL EMERGENCY NUMBER 5-2222

J18-047

5.22 OIL CARTS USED FOR SERVICING AIRPLANES

LOCATION

Various areas of the Field.

DESCRIPTION

These oil carts consists of wheeled dollies containing steel tank, usually under three hundred gallons capacity plus a pump and hose. These tanks are used for transporting oil to the airplanes or removing oil from the aircraft.

5.22.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

Because of the hazards involved in having flamable liquids near aircraft, these carts are inspected at regular intervals. Any defective equipment is repaired or replaced. The personnel using these carts near airplanes are trained and experienced in their use. The carts are stored when not in use, in an area which drains to an oil separator.

TRAINING

No additional training in spill prevention is felt necessary at this time.

PLANNED SPILL PROTECTION

No additions are planned for these oil carts at this time.

D1 4100 7740 ORIG.3/71

5.22 OIL CARTS USED FOR SERVICING AIRPLANES (Continued)

5.22.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain any spill and prevent it from reaching any of the drains.

TRAINING

Personnel using these carts will be instructed in the methods of containing oil spills and sealing drains.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.22) Oil Carts used for Servicing Airplanes

LOCATION: Various Areas of the Field.

DESCRIPTION: Wheeled dollies, containing an oil storage tank, a pump and hose.

HAZARD:

1. Over-filling tank.
2. Leaking tank.
3. Broken fitting or hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Contain spill by means of oil absorbent materials.
2. Close-off source of spill.

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J15-047

5.23 MOBILE EQUIPMENT

LOCATION

Throughout the plant areas.

DESCRIPTION

These items consists of all mobile equipment, such as trucks, lift trucks, automobiles, self propelled cranes and other items which have oil filled transmissions and/or crank cases.

5.23.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

These units are designed to withstand the normal "wear and tear" on the oil systems.

TRAINING

No additional operator training in spill prevention if felt necessary at this time.

PLANNED SPILL PROTECTION

No additional spill protection is felt necessary at this time.

5.23.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The premary effort will be to contain any spill and prevent it from reaching any drains.

TRAINING

Personnel operating mobile equipment will be instructed in the methods of containing oil spills and sealing drains.

D1 4100 7740 ORIG.3/71

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.23) Mobile Equipment

LOCATION: Various areas throughout the Plant.

DESCRIPTION: All mobile equipment, such as trucks, lift trucks, automobiles and other items having oil filled transmissions and/or crank cases.

HAZARD:

1. Broken hose or fitting.
2. Broken oil pan.

ACTION REQUIRED IN EVENT OF SPILL:

1. Contain spill by means of absorbent materials.

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CALL EMERGENCY NUMBER 5-2222

5.24 MACHINE TOOLS

LOCATION

Various areas of the plant, but particularly in the 3-370 and 3-373 buildings.

DESCRIPTION

The machine tools throughout the Boeing Field complex have transmissions that contain oil and also hydraulic systems. Some use cutting fluids.

5.24.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The machine shops have operating personnel at the machines, whenever the machines are operating. These people are experienced and are trained in the operation of their equipment.

TRAINING

No additional training is felt necessary at this time.

PLANNED SPILL PROTECTION

No additional spill protection is felt necessary at this time.

5.24.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain the spill and prevent it reaching any floor or trench drains.

TRAINING

Personnel will be given instruction in the methods of containing any spill that may occur.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.24) Machine Tools

LOCATION: Various areas throughout the plant.

DESCRIPTION: Machine tools, such as mills, lathes, radial drills and surface grinders, which have oil transmissions, hydraulic systems or use cutting fluids.

HAZARD:

1. Spill while filling or draining oil from system.
2. Broken oil line or fitting.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill.
2. Contain spill by means of oil absorbent materials.

DATE: 6/15/74 **REVISION/UPDATE NO.**

CALL EMERGENCY NUMBER 5-2222

5.25 HOT WATER BOILERS

LOCATION

14-02 Building (Thompson Tract)

DESCRIPTION

This facility consists of two hot water boilers, with natural gas as the primary fuel, and heating oil as the secondary fuel. Included inside the building are the necessary water treatment tanks, fuel oil pumps, controls and water distribution system. The fuel is provided by a 20,000 underground storage tank located west of the building.

5.25.1 CONTROL PLAN

EXISTING SPILL PROTECTION

PHYSICAL ASPECTS

The fuel oil tank is located underground and is covered with a concrete slab. All piping to the building is underground. The facility is operated by licensed operators who are familiar with the operation of the equipment. The oil system is operated only when the burners are on an interruptible basis from natural gas.

TRAINING

The personnel operating the facility will be instructed in the methods of spill prevention, location of the floor drains and the discharge point of each floor drain.

PLANNED SPILL PROTECTION

The drain in the pipe chase on the north side of the hot water boilers will be plugged. The sump pump in the sump will be operated as a manual system by the operator.

5.25 HOT WATER BOILERS (Continued)

5.25.2 COUNTERMEASURES PLAN

RESPONSE/ACTION

The primary effort will be to contain any spill and prevent it from reaching any drains. If the spill cannot be contained, the burners will be switched to natural gas and the oil system shut down.

TRAINING

Personnel will be instructed in the methods of containing oil spills, sealing drains and the techniques of getting additional help, should it be required.

COUNTERMEASURES WORK SHEET

BOEING COMMERCIAL AIRPLANE COMPANY

BOEING FIELD

ITEM: (5.25) Hot Water Boilers

LOCATION: 14-02 Building (Thompson Tract)

DESCRIPTION: Two hot water boilers, natural gas and oil fueled. One 20,000 gallon underground tank for oil.

HAZARD:

1. Over-filling oil tank.
2. Broken fuel line or fitting.
3. Tanker-truck hose failure.
4. Tanker-truck tank rupture.
5. Spill while connecting or disconnecting fill hose.

ACTION REQUIRED IN EVENT OF SPILL:

1. Close-off source of spill by closing off valve on fill-truck, or shutting down oil pumps.
2. Contain spill with oil absorbent material and plastic sheeting.
3. Seal off drains and catch basins as required.
4. Shut down sump pump and lift station pumps if required.

DATE: 6/15/74 **REVISION/UPDATE NO.**

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